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ABSTRACT

This bulletin, number 40, provides an inventory of abstracts of ongoing or recently completed research studies relating to children. In addition, Bulletin 40 contains a bibliography on adoption which updates previous ERIC Clearinghouse on Elementary and Early Childhood Education bibliographies on the subject. Bibliographic sources of the bulletin include ERIC documents, journal articles, books, reports, and conferences papers. Citations are entered under the following categories: long-term research, growth and development, special groups of children, the child and the family, socioeconomic and cultural factors, educational factors and services, social services, and health services. Only research reported between September 1977 and February 1978 is included in this issue of the Bulletin. (Author/RH)

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RESEARCH RELATING TO CHILDREN

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Bulletin 40

Prepared by

Dorothy O'Connell
Sandra Bajjelieh
Julianne Lee Charlton

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NOTES: *Research Relating to Children* is prepared under the direction of Lilian G. Katz, Ph.D., Director, ERIC Clearinghouse on Early Childhood Education. Investigators who wish to submit abstracts of their research projects should address correspondence to:

Research Relating to Children
805 West Pennsylvania Avenue
Urbana, Illinois 61801

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PREFACE

Research Relating to Children, Bulletin 40 includes reports of research in progress or recently completed research. With the exception of the section on Long-Term Research, it does not repeat studies included in *Bulletins 1* through *39*, even though they are still in progress. This issue, therefore, does not reflect all research relating to children, but only research reported to us from September 1977 through February 1978.

In addition to reports of current research, *Bulletin 40* contains *Adoption: A Bibliography*, which updates previous ERIC Clearinghouse on Early Childhood Education bibliographies on the subject. The bibliographic sources include ERIC documents, journal articles, books, reports, and conference papers that we hope you will find useful.

Publication references and plans are cited in the abstracts of research in the bulletin. The Clearinghouse, however, does not maintain information on the publications of the investigators. If you wish to obtain further details about any of the projects, please check professional journals in the appropriate field or write directly to the investigator.

We wish to thank investigators who have submitted reports of their research and those who have informed us of other studies. We wish to acknowledge the valuable assistance of the Social Research Group, George Washington University and the foundations that have provided us with information about their research grants.

Lilian G. Katz, Ph.D.
Director
ERIC Clearinghouse on Early Childhood Education

To Research Investigators:

This publication is only as complete as you are willing to make it. On page 173 you will find a form for reporting your current research. On page 177 you will find a form to let us know of other investigators who are working in the field. Please let us hear from you.

Research Relating to Children
805 West Pennsylvania Avenue
Urbana, Illinois 61801

CONTENTS

	Page
BIBLIOGRAPHY	
<i>Adoption: A Bibliography</i>	1
LONG-TERM RESEARCH	13
GROWTH AND DEVELOPMENT	
General	29
Physical	29
Intellectual	38
Personality	61
Social	64
SPECIAL GROUPS OF CHILDREN	
Physically Handicapped	75
Mentally Retarded	84
Gifted	86
Emotionally Disturbed and Mentally Ill	88
Juvenile Delinquency	92
Corrections	93
THE CHILD IN THE FAMILY	
Family Relations	95
Childrearing	100
SOCIOECONOMIC AND CULTURAL FACTORS	105
EDUCATIONAL FACTORS AND SERVICES	
General Education	111
Specific Skills	123
Special Education	128
SOCIAL SERVICES	133
HEALTH SERVICES	141
INSTITUTION INDEX	149
INVESTIGATOR INDEX	155
SUBJECT INDEX	161
OTHER ABSTRACTING JOURNALS AND SERVICES	171
SUMMARY OF RESEARCH REPORT FORM	173
INVESTIGATOR REPORT FORM	177

ADOPTION: A BIBLIOGRAPHY

This selective bibliography on adoption is divided into two sections: (1) Journal Articles and ERIC Documents and (2) Books, Directories, and Reports.

Citations of ERIC documents (denoted by ED numbers) and some journals were retrieved from the ERIC Data Base. Journal citations were also obtained from other data bases including: Psychological Abstracts, Social Scisearch, Child Abuse and Neglect, Sociological Abstracts, and PAIS, Inc.

Books and journal articles are available in public libraries. ERIC documents may be ordered from:

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ERIC studies may be ordered on microfiche (MF) or hard copy (HC). To read MF (a transparent film card), use a microfiche reader available in most libraries. HC is a photocopy of the original document.

Major descriptors (marked with asterisks) and minor descriptors appear under some citations. Descriptors with asterisks denote the document's major subject matter; terms without asterisks suggest topics of lesser import that are covered in the document.

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Unger, Christopher *et al.* *Chaos, madness, and unpredictability — Placing the child with ears like Uncle Harry's (The Spaulding Approach to Adoption)*. Chelsea, Michigan: Spaulding for Children, 1977. 374 Pp.

Wheeler, Candice. *Adopting older children*. Oregon Department of Human Resources, 1977.

Children's Bureau (USDHEW), P.O. Box 1182, Washington, D.C. 20013

Publishes a bimonthly journal, *Children Today*, as well as books dealing specifically with adoption and other topics:

National Center for Child Advocacy (USDHEW), Suite 501, 2011 Eye Street, N.W., Washington, D.C. 20006.

Publishes a monthly bulletin, *Exchange: Bulletin of the Child Welfare Resources Information Exchange*, which includes a section on adoption in each issue.

Child Welfare League of America, Inc., 67 Irving Place, New York, New York 10003.

Publishes a monthly journal, *Child Welfare*, and books on adoption standards, transracial adoption, and other topics. Some recent publications include:

Child Welfare League of America Research Center. *The sealed adoption record controversy*, 1976. 30 Pp. (\$2.00) Order No. X-11.

Grow and Shapiro. *Black children - white parents: A study of transracial adoption*, 1974. 239 Pp. (\$6.95) Order No. A-37.

Grow and Shapiro. *Transracial adoption today: Views of adoptive parents and social workers*, 1975. 91 Pp. (\$3.95) Order No. A-38.

Meezan, William *et al.* *Adoptions without agencies: A study of independent adoptions*, 1978. (No price indicated) Order No. A-40.

LONG-TERM RESEARCH

Note: The reports in this section concern research programs that are continuous.

40-AA-1 LONGITUDINAL STUDY OF CHILD GROWTH AND DEVELOPMENT

Investigator(s): Frank Falkner, M.D., F.R.C.P., Director; Alexander F. Roche, M.D., Ph.D., Chief, Section on Physical Growth and Genetics; and Robert McCall, Ph.D., Chief, Section on Perceptual/Cognitive Development, Fels Research Institute for the Study of Human Development, 800 Livermore Street, Yellow Springs, Ohio 45387.

Purpose: To conduct a multidisciplinary study of children whose health, growth, psychological development, and environment have been studied since birth, with prenatal and genetic information; and to determine normative patterns of growth and development in human subjects.

Subjects: Over 800 subjects: from present infants to adults with their children in study. The subjects are healthy, from rural and urban areas, and from upper-lower to middle class backgrounds.

Methods: A multidisciplinary longitudinal study is being conducted with regular visits and use of appropriate analysis and computer methodology.

Duration: 1930-continuing.

Cooperating group(s): (1) Public Health Service, U.S. Department of Health, Education, and Welfare. (2) National Science Foundation. (3) Samuel S. Fels Fund. (4) U.S. Air Force.

Publications: Information is available from the investigators on approximately 1,022 publications that have been completed to date.

40-AA-2 DEVELOPMENT OF BUDGETS FOR CLOTHING AND HOUSEHOLD TEXTILES

Investigator(s): Virginia Britton, Ph.D., Home Economist, Consumer and Food Economics Institute, Agricultural Research Service, U.S. Department of Agriculture, Federal Center Building No. 1, Hyattsville, Maryland 20782.

Purpose: To develop and update current household clothing budgets taking into account known physiological and sociopsychological needs, clothing habits, income, and other resources of various population groups, and the prices and availability of clothing items.

Subjects: 12,000 children in 6,000 families with husband and wife and one to five children, but with no other persons living in the home.

Methods: Data were gathered from the 1960-61 Survey of Consumer Expenditures by the Bureau of Labor Statistics and the U.S. Department of Agriculture. Budgets for children were computed using regression methods for three economic levels of the USDA food plans — economy, low cost, and moderate cost. Separate clothing budgets were computed for boys and girls categorized by age, region, and urbanization. Budgets will be published as total expenditures for children's clothing (updated to current price levels) and in garment equivalent units.

Findings: Budget costs for boys tended to equal comparable budgets for girls at the economy level. However, at higher budget levels, boys' costs were substantially less than girls' budgets. This was especially true for older children. Cost differences between clothing budget levels were substantially greater than between food plans, reflecting the greater elasticity of clothing expendi-

tures. The majority of farm budgets and rural non-farm budgets was about equal to the comparable urban budgets.

Duration: 1962-continuing.

Publications: Britton, V. Clothing budgets for children from the USDA: Annual costs at three levels in four regions. *Home Economics Research Journal*, March 1973, 1(3), 173-184. (Reprints are available from: Sales Office, American Home Economics Association, 2010 Massachusetts Avenue, N.W., Washington, D.C. 20036. Price \$1.00.)

40-AA-3

CHILD HEALTH AND DEVELOPMENT STUDIES

Investigator(s): Bea J. van den Berg, Ph.D., Research Pediatrician, School of Public Health, University of California, Berkeley, California 94720; Stephen Thomas, M.D., Director, Department of Obstetrics and Gynecology; and Edgar Schoen, M.D., Director, Department of Pediatrics, Kaiser Foundation Hospital, Oakland, California 94611.

Purpose: To investigate the relationships of biologic, genetic, and medical and environmental factors in the parents (including events in pregnancy, labor, and delivery) to the normal and abnormal development of the offspring; and to investigate the relationships of these factors to pregnancy loss in the form of early fetal death, perinatal mortality, infant and childhood mortality, and to incidence of congenital anomalies, to growth and morbidity patterns in infancy and childhood, and to cognitive attainment, behavioral development, and physical characteristics at ages 5 and 10 years.

Subjects: Members of the Kaiser Foundation Health Plan (a prepaid medical health plan) who reside in the San Francisco-East Bay Area.

Methods: The method of study is longitudinal for both mother and child. In addition to information obtained specifically for the studies, the medical records for the gravida and child provided information on illnesses, injuries, and drugs. A special interview and developmental examination were given the child on his 5th birthday and to a large sample of children when they were ages 9 to 11. These include vision, hearing, speech, and tests of cognitive ability. It is planned to extend the observations with a follow-up examination of a subcohort of about 2,000 mothers and their children when the latter are about 16 years old. An epidemiological research project is in process, aimed at the identification of precursory factors for high blood pressure in young persons.

Duration: July 1959-continuing.

Publications: Copies of a publication list and reprints are available from: Child Health and Development Studies, 3867 Howe Street, Oakland, California 94611.

40-AA-4

THE BERKELEY, CALIFORNIA GROWTH STUDY

Investigator(s): Dorothy H. Eichorn, Ph.D., Research Psychologist, Institute of Human Development, University of California, Berkeley, California 94720.

Purpose: To study the mental and physical growth of normally healthy persons from birth to the present.

Subjects: 60 full-term, healthy newborns, born in Berkeley hospitals from 1928 to 1929 of white, English-speaking parents; and 140 offspring of these subjects, ages birth to 20, seen irregularly.

Methods: The same data, appropriate for age, were collected for the subjects and their offspring. Beginning in the first week of life, tests of mental and motor development, pediatric examinations, and interviews were conducted at frequent intervals during growth. At all visits, inquiries were made concerning current health and recent illnesses. Anthropometrics, body photographs, and skeletal X-rays were taken at most ages. Socioeconomic data were collected. Studies of the physical aspects of growth include analyses that compare health histories with physical growth and with skeletal maturation. Emotional and other personality variables are being studied for consistency, and in various interrelations with maternal behavior in infancy, birth histories, socioeconomic status, and intellectual and physical growth.

Duration: 1928-continuing.

Publications: (1) *American Psychologist*, 1968, 23(1), 1-17. (2) *Monograph of the Society for Research in Child Development*, 1963, 28. (3) Bayer, Leona and Bayley, Nancy, *Growth diagnosis: Selected methods for interpreting and predicting physical development from one year to maturity*. Chicago: University of Chicago Press, 1959.

40-AA-5

GROWTH AND PSYCHOPHYSIOLOGICAL PATTERNS IN INFANCY

Investigator(s): Wagner H. Bridger, M.D., Associate Professor of Psychiatry; and Beverly Birns, Ph.D., Assistant Professor of Psychology, Albert Einstein College of Medicine, Yeshiva University, Bronx, New York 10461.

Purpose: To investigate the origins and course of development of individual differences in neonates.

Subjects: Normal, healthy, full-term babies, 2 to 5 days old, born at Bronx Municipal Hospital Center.

Methods: A neonatal behavioral profile, which was established in previous studies, will be used. The profile includes behavioral and heart rate ratings on excitation, soothing, feeding, sleep, and nonstimulus periods of observation. Neonates will be followed at ages 2 weeks, and 1, 2, 3, and 4 months to measure the stability of early appearing traits and their relation to later behaviors. Data will be analyzed with respect to stability of early appearing behaviors and the relationship between neonatal behavior and maternal and birth history.

Duration: 1966-continuing.

Cooperating group(s): National Institute of Mental Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: (1) Newton, Grant and Levine, Seymour (Eds.) *Early experience and behavior: Psychobiology of development*. Springfield, Illinois: Charles C Thomas, 1968. (2) *Psychosomatic Medicine*, 1966, 28, 316.

40-AA-6

LONGITUDINAL STUDY OF DENTOFACIAL SKELETAL, PHYSICAL GROWTH, AND NUTRITION OF CHILDREN

Investigator(s): Bhim Sen Savara, D.M.D., M.S., Chairman, Child Study Clinic, School of Dentistry, Health Sciences Center, University of Oregon, Portland, Oregon 97201.

Purpose: To study the dentofacial growth of children, assess skeletal age related to facial growth, and variations in physique and its effect on dentofacial growth; and to determine heritable traits.

Subjects: Over 400 subjects (including 40 pairs of twins), followed from preadolescence to adulthood, with records taken every 6 months until age 14 and yearly thereafter.

Methods: Cephalograms, hand, wrist, and calf x-rays, intraoral x-rays, dental study casts, anthropometric measurements, and photographs are taken and oral examinations administered to the subjects every 6 months until age 14 and yearly thereafter. A system has been developed to combine cephalometric data with dental cast measurements. In effect, the cephalograms are expanded to three dimensions by using both frontal and lateral cephalograms of the Broadbent Bolton cephalometric system, then study cast is measured in three dimensions and mathematically placed in this expansion. Measurements are corrected for magnification and distortion by transformation formulae (Savara 1965).

Findings: See Publications below. Over 50 publications have been generated from this longitudinal program since it was begun in 1949.

Duration: 1949-1978.

Cooperating group(s): National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: (1) A list of publications is available from the investigator. (2) Some recent publications include: (a) Savara, B.S. and Takeuchi, Y. A longitudinal study of effects of electrical burns on growth of the oro-facial structures (in press). (b) Takeuchi, Y.; Savara, B.S.; and Shadel, R.J. Norms of size and biennial increments of eight anatomical measures of the temporal bone in boys and girls from 4 to 20 years of age (in press). (c) Savara, B.S. and Steen, J.C. Timing and sequence of eruption of permanent teeth in a longitudinal sample of Oregon children (in press). (d) Takeuchi, Y. *et al.* Longitudinal growth study of the sphenoid bone using factor analysis (in press). (e) Savara, B.S. and Takeuchi, Y. Locating landmarks on sphenoid and temporal bones (in press). (f) Arya, B.S. and Savara, B.S. Field theory and mesiodistal tooth size. *Journal of Indian Orthodontic Society*, 1976, VIII(4), 23-28.

40-AA-7

NEW RADIOGRAPHIC STANDARDS OF REFERENCE FOR SKELETAL DEVELOPMENT OF CHILDREN AND STANDARDS IN PREPARATION

Investigator(s): S. Idell Pyle, Ph.D., Research Associate in Anatomy, School of Medicine, Case Western Reserve University, Cleveland, Ohio 44106; William W. Greulich, Ph.D., Research Biologist, National Institute of Child Health and Human Development, Bethesda, Maryland 20014; and staff of the National Center for Health Statistics involved in the National Health Survey, Public Health Service, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20201.

Purpose: To develop radiographic standards of reference for skeletal development of children to provide a basis for identifying maturity levels of growing bones in the hands, elbows, shoulders, hips, knees, and feet of children and youths according to the shapes of the bone shadows in an X-ray film.

Subjects: Approximately 1,000 healthy individuals in Cleveland and Boston.

Methods: The bone shadows in an X-ray film display a modal rate of growth of each bone by illustrating regularly occurring osseous features which develop in series in the surface of the bone cortex as it calcifies. A reference standard consists of films arranged as a series to show sequential osseous features which are alike in males and females. It is an instrument for measuring the skeletal maturity level of children. Films of the subjects, covering the full span of growth from birth to adulthood, have been used to prepare standards. A standard of reference for joints in the upper extremity is in preparation, with the section on the hand and wrist showing the application of cardinal maturity indicators of individual bones to handwrist bones which are anomalous in the number of their bone growth centers. For published standards, see publication references listed below.

Duration: 1948-continuing.

Cooperating group(s): Bolton-Brush Growth Study Center, Case Western Reserve University, Cleveland; Department of Maternal and Child Health, Harvard University School of Public Health, Boston; National Center for Health Statistics, Rockville, Maryland; Departments of Pediatrics and Endocrinology, Henry Ford Hospital, Detroit; Merrill-Palmer Institute, Detroit; Department of Education, Eastern Michigan University, Ypsilanti.

Publications: (1) Greulich, W.W. and Pyle, S.I. *A radiographic atlas of skeletal development of the hand and wrist* (2nd Ed.) Stanford, California: Stanford University Press, 1959. (2) Hoerr, N.L.; Pyle, S.I.; and Francis, C.C. *A radiographic atlas of skeletal development of the foot and ankle* (1st Ed.) Springfield, Illinois: Charles C Thomas, 1962. (3) Pyle, S.I. and Hoerr, N.L. *A standard of reference for the growing knee* (2nd Ed.) Springfield, Illinois: Charles C Thomas, 1969. (4) Pyle, S.I.; Waterhouse, A.M.; and Greulich, W.W. *A standard of reference for the growing hand and wrist* (1st Ed.) Cleveland, Ohio: The Press of Case Western Reserve University, 1971.

METHODS IN CHARACTER DEVELOPMENT

Investigator(s): Ernest M. Ligon, Ph.D., Director; and staff, Union College Character Research Project, 10 Nott Terrace, Schenectady, New York 12308.

Purpose: To develop more effective methods in character development in cooperation with families and character training agencies. ("Character" is defined in terms of three dimensions: philosophy of values, breadth of social vision, and strength of purpose.)

Subjects: Children and families throughout the United States. The families belong to churches, YMCAs, and schools but participate in the study as individual families.

Methods: Procedures of the research are based on action research, in which the participants cooperate with the laboratory and use methods of coscientist research. Open-ended reports on research goals constitute the basic body of research data. An analysis of these data serves as the basis for the development of new procedures and for the scientific reports that are published concerning it.

Findings: Reports have been prepared concerning hypotheses tested in the home and character building agencies. Most of the findings relate to the home, learning, decision making, and methods for character development, plus descriptions of age level potentials, especially for decision making.

Duration: 1935-continuing.

Cooperating group(s): Lilly Endowment, Inc.

Publications: Catalog: *Attitude Education and Character Development*, which lists 44 publications and includes a price list, is available from the investigator.

LONGITUDINAL GROWTH STUDIES OF CHILDREN WITH CRANIOFACIAL BIRTH DEFECTS

Investigator(s): Samuel Pruzansky, D.D.S., Director, Center for Craniofacial Anomalies, Medical Center, University of Illinois, P.O. Box 6998, Chicago, Illinois 60680.

Purpose: To study the epidemiology, genetics, morphology, physiology, and postnatal development of children; and to plot the natural history of children with craniofacial birth defects.

Subjects: Over 3,000 subjects, males and females, from infancy to adulthood.

Methods: The subjects were initially studied as infants. Procedures included roentgenocephalometry, tomography, dental casts, and photographs. Speech and hearing, psychosocial, and pediatric evaluations supplied additional information.

Findings: Patterns of growth have been delineated that are useful in clinical management. Some conditions have been shown to get worse; some show spontaneous improvement; and others remain unchanged. Syndrome-specific cranial morphologies have been described and genetic significance has been described.

Duration: 1949-continuing.

Cooperating group(s): (1) Illinois State Pediatric Institute. (2) Division of Services for Crippled Children, University of Illinois. (3) Cook County Children's Hospital. (4) Division of Research; Maternal and Child Health Services; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare. (5) National Institute of Dental Research; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: *Cleft Palate Journal*, 1971, 8, 239. A list of articles in journals of dentistry, medicine, public health, speech and hearing, and psychology is available from the investigator.

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP)

Investigator(s): J. Stanley Ahmann, Ph.D., Project Director; Roy Forbes, Ed.D., Project Director; and George Johnson, Ph.D., Associate Project Director, National Assessment of Educational Progress, 700 Lincoln Tower, 1860 Lincoln Street, Denver, Colorado 80203.

Purpose: To obtain census-like data on the knowledge, skills, concepts, understandings, and attitudes possessed by young Americans; and to measure the growth or decline in educational attainments that occur over time in the 10 learning areas assessed.

Subjects: 27,000 subjects annually in each age group: 9, 13, and 17 (including high school dropouts and early graduates); and 5,000 young adults annually, ages 26 to 35.

Methods: The National Assessment of Educational Progress is an annual national survey that assesses 10 learning areas: art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies, and writing. Three areas have been assessed twice: science (1969-70 and 1972-73); writing (1969-70 and 1973-74); and reading (1970-71 and 1974-75). The four age levels assessed were selected to correspond to the end of primary, intermediate, secondary, and postsecondary education. A national probability sample of approximately 2,500 to 2,600 individuals per group administered package, and a sample of 2,100 to 2,200 individuals per individually administered package are assessed annually. The samples are designed to allow NAEP to estimate the performance of the population for that age level. Students in school are assessed in small groups up to 12, or in some cases, in individual interviews. Paper and pencil questions, discussions, and actual tasks to perform are included among the exercises. Adults are interviewed individually at home, and 17-year olds who are out of school also respond to exercises individually. Results are reported for about 50 percent of the exercises given each year and are stated in percentages of people responding correctly or incorrectly. Results are reported nationally and for geographic region, size and type of community, age, sex, race, and parental education.

Duration: 1969-continuing.

Cooperating group(s): (1) National Center for Educational Statistics; U.S. Office of Education; Education Division; U.S. Department of Health, Education, and Welfare. (2) Carnegie Corporation. (3) Ford Foundation's Fund for the Advancement of Education. (4) Research Triangle Institute. (5) Measurement Research Center. (6) Education Commission of the States.

Publications: The National Assessment Publications List is available from: Education Commission of the States, 300 Lincoln Tower, 1860 Lincoln Street, Denver, Colorado 80203.

40-AA-11

COLLABORATIVE STUDIES IN CEREBRAL PALSY AND OTHER NEUROLOGICAL AND SENSORY DISORDERS OF INFANCY AND CHILDHOOD

Investigator(s): Joseph S. Drage, M.D., National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health, Public Health Service, U.S. Department of Health, Education, and Welfare, Bethesda, Maryland 20014.

Purpose: The Collaborative Perinatal Project (CPP) is a longitudinal multidisciplinary research effort which seeks leads to the etiologies of cerebral palsy, mental retardation, learning disorders, congenital malformations, minimal brain dysfunction, convulsive disorders, and communicative disorders through studies which relate the events, conditions, and abnormalities of pregnancy, labor, and delivery to the neurological and mental development of the children of these pregnancies.

Subjects: During a period from 1959 through 1966, detailed research data were obtained from 50,000 women during pregnancy, labor, and delivery. The children born to these 50,000 women during their participation in the CPP have been examined at specific intervals up to the child's 8th birthday to identify abnormal conditions which might limit the child's ability to reach maximum developmental potential.

Methods: A comprehensive analysis of the data will investigate the complex interactions between the child's condition and the antecedent factors which may have contributed to the condition. The analysis of this data is underway within the National Institutes of Health, within other governmental agencies, and under contract with teams of investigators at medical centers outside of government. The Perinatal Research Branch and the National Institute of Neurological and Com-

municative Disorders and Stroke have the responsibility for monitoring, coordinating, and administering the overall research effort. The goal of this effort is to make a series of publications available to the research community and the general public. The projected completion of this analysis is June 30, 1976. The data for the CPP were collected at 12 major medical centers in the United States.

Duration: 1956-continuing.

Cooperating group(s): Charity Hospital, New Orleans, Louisiana; Johns Hopkins University School of Medicine, Baltimore, Maryland; Boston Lying-In Hospital, Children's Medical Center, and Harvard University (Warren Anatomical Museum), Boston, Massachusetts; University of Minnesota Medical School, Minneapolis, Minnesota; Columbia-Presbyterian Medical Center, New York, New York; Children's Hospital of Buffalo, Buffalo, New York; University of Oregon Medical School, Portland, Oregon; Children's Hospital of Philadelphia and Pennsylvania Hospital, Philadelphia, Pennsylvania; Brown University, Providence, Rhode Island; University of Tennessee Medical School, Memphis, Tennessee; Medical College of Virginia, Richmond, Virginia.

Publications: (1) Niswander, K.R. *et al. The women and their pregnancies, 1972.* (The Collaborative Perinatal Study of the National Institute of Neurological and Communicative Disorders and Stroke.) Available from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Order Stock No. 1749-00038; price, \$10.00. (2) A bibliography is available from the investigator.

40-AA-12

STUDY OF PERSONALITY ORIENTED DEVELOPMENT BY THE TWIN INTRAPAIR COMPARISON METHOD

Investigator(s): William Pollin, M.D., Chief; Donald Cohen, M.D., Clinical Associate; and Eleanor Dibble, Research Social Worker, Section on Twin and Sibling Studies, Adult Psychiatry Branch, National Institute of Mental Health, Health Services and Mental Health Administration, Public Health Service, U.S. Department of Health, Education and Welfare, Bethesda, Maryland 20014.

Purpose: To understand the contributions of genetic, constitutional, and environmental factors to social, emotional, and cognitive development during the first years of life; specifically, to explicate the factors that underlie the emergence of individuality, using twins and triplets as subjects.

Subjects: Twins and triplets, from the prenatal period through elementary school age.

Methods: The central methodological principle emphasizes the effort to define precisely developmental differences within infant and childhood MZ twin pairs, and then search for the determinants of such differences. In the longitudinal study, parents are interviewed as soon as the diagnosis of a twin pregnancy is made. Neurological, pediatric, and developmental assessments are performed at birth and at 3- to 6-month intervals during the first years of life. The parents are interviewed at the same intervals about the children's development and family history. In the preschool period, the children receive standardized psychological testing, are observed in a standardized nursery school setting, and are administered projective psychological testing. Children and families are visited at home and are also seen in structured office settings. In cross-sectional studies, children are seen for developmental evaluation, psychological assessment, and observations of free play; and their parents are interviewed. The value of questionnaire techniques is being investigated. A general research question relates to the way in which constitutional differences in the children elicit different types of parenting, and the ways in which differential parental behavior shapes the emergence of personality differences in children.

Duration: 1967-1980.

Investigator(s): Emory L. Cowen, Ph.D., Professor, Department of Psychology, and Director; D.A. Dorr, Ph.D., Research Coordinator; L.D. Izzo, M.A., Chief Psychologist; and M.A. Trost, M.A., Chief Social Worker, Primary Mental Health Project, University of Rochester, River Campus Station, Rochester, New York 14627.

Purpose: To detect and prevent school maladaptation.

Subjects: 7,500 school children, including 4,500 primary children in 11 preventively oriented school mental health programs.

Methods: Current research, which originated in 1958 (see *Research Relating to Children, Bulletin 19*, January-September 1965, Study 19-SS-7, p. 214), includes 23 studies on training nonprofessionals, evaluation of programs, process analyses, selection-process relations, selection-outcome relations, and process-outcome relations. Between 20 and 30 different research instruments and assessment procedures are being used.

Duration: 1958-continuing.

LANGUAGE ACQUISITION IN THE CONTEXT OF THE DEVELOPMENT OF BEHAVIOR AND INTERACTION

Investigator(s): Margaret Bullowa, M.D., Researcher, Speech Communication Group, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139.

Purpose: To find the steps by which early stages of the child's language development take place.

Subjects: Four firstborn children from white, English-speaking, middle class families.

Methods: Each child was observed from birth for at least 30 months at home at weekly intervals. On each visit a half hour continuous record was made on tape and film. An observer using a shielded microphone dictated a simultaneous description of ongoing behavior and interaction to supplement the film taken by a robot camera. A timing signal was placed on the tape and film every 5 seconds. (The tape and film from an observation may be synchronized during playback in the laboratory.) In addition, an independent team that consisted of a pediatrician and a developmental psychologist visited each baby's home once a month to assess other aspects of maturation and development. Indexes to sound and transcripts were made from the tapes to permit rapid search. Tapes are analyzed by linguists interested in phonological, semantic, and syntactic features. Synchronized tape and film is studied by linguists and by the principal investigator, who is interested in the communicative behavior of which the vocalization forms a part.

Findings: The most significant finding is the apparent obligatory relationship between the child's vocal sound production and actions with the same meaning in early *performative sentences*. Such sentences are used by the child to communicate messages when he is showing something to someone, when he is greeting someone, etc. Another finding is the spontaneous appearance of sentences with topic-comment construction in the child's speech even though parents rarely use this construction. (The construction is not characteristic of adult American English.)

Duration: Pilot study, 1959-1965; present study, 1965-continuing.

Cooperating group(s): National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: (1) *Journal of Child Psychiatry*, 1964, III(1), 53. (2) *Monographs of the Society for Research in Child Development*, 1964, 29(1), 101-114. (3) *Language and Speech*, 1964, 7(2), 107-111. (4) *Quarterly Progress Report of the Research Laboratory of Electronics*, 1966, 81, 181-186. (5) *Lingua*, 1967, 19(1), 1-59. (6) *Foundations of Language*, 1967, 1, 37-65. (7) Reibel, D.A. and Schane, S.A. (Eds.) *Modern studies in English*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969. Pp. 422-447. (8) Bar-Adon, A. and Leopold, W.F. (Eds.) *Child language: A book of readings*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971. (9) *Journal of the American Academy of Child Psychiatry*, 1971, 10(1), 124-135. (10) *Quarterly Progress Report of the Re-*

search Laboratory of Electronics, M.I.T., 1971. No. 100. (11) Bullowa, M. From communication to language. Presented at the International Symposium on First Language Acquisition, Florence, Italy, 1972 (mimeo). (12) Bullowa, M. and Putney, E. A method for analyzing communicative behavior between infant and adult from film. Presented at a meeting of the International Society for the Study of Behavioral Development, Ann Arbor, Michigan, 1973 (mimeo). (13) Bullowa, M. Non-verbal communication in infancy. Presented at the 1st Congress of the International Association for Semiotic Studies, Milan, Italy, 1974 (preprint). (14) Gruber, J.S. Correlations between the syntactic constructions of the child and of the adult. In C.A. Ferguson and D. Slobin (Eds.), *Studies of child language*. Holt, Rinehart and Winston, 1973. Pp. 440-445. (15) Bullowa, M. When infant and adult communicate, how do they synchronize their behaviors? In A. Kendon *et al.* (Eds.), *Organization of behavior in face-to-face interaction*. Mouton, 1975. Pp. 97-129. (16) Bullowa, M. *et al.* Infant vocalization: Communication before speech. In T.R. Williams (Ed.), *Socialization and communication in primary groups*. Mouton, 1975. Pp. 243-281. (17) Bullowa, M. A matrix for language. Presented at the 21st Annual Conference of the International Linguistic Association, New York City, March 1976 (mimeo). (18) Bullowa, M. From communication to language. *International Journal of Psycholinguistics* (in press). (19) Bullowa, M. Infants as conversational partners. In T.F. Myers (Ed.), *The development of discourse and conversation*. Edinburgh University Press (in press). (20) Bullowa, M. From performative act to performative utterance. In S.K. Ghosh (Ed.), *Biology, language and human behavior*. University Park Press (in press).

40-AA-15

THE HARVARD PRESCHOOL PROJECT

Investigator(s): Burton L. White, Ph.D., Director; Jean Watts, Ph.D., Co-Director; and Barbara Kaban, M.A., The Harvard Preschool Project, Laboratory of Human Development, Graduate School of Education, Harvard University, 418 Larsen Hall, Appian Way, Cambridge, Massachusetts 02138.

Purpose: To trace the development of educability and competence in children during the first 6 years of life; and simultaneously to trace the role of experience in such development.

Subjects: Presently, 32 normal children, ages 12 to 32 months, of both sexes, half of whom were selected because they exhibited potentials to develop high degrees of general competence during the second and third years of life; while the other children seemed likely to develop a considerably lower level of competence.

Methods: The work in progress constitutes a longitudinal natural experiment. Data are collected by home observation and testing of the children on the average of 2 hours per week. One observational technique consists of tape recordings in which the observer describes the child's activities. The data are then coded onto forms using instruments developed for the project. Another technique involves a checklist record of behavior. Tests of language and cognitive development are administered regularly. Factors are measured including stream of experience, the child's competencies, and salient environmental influences.

Findings: Analysis of preliminary data indicates that the observation instruments are monitoring the development of competence in promising ways. Further indications of how childrearing practices influence the process are becoming clear. The mother, or substitute, usually through indirect action, is seen as the major environmental influence on the development of competence. A longitudinal experiment will be initiated this year. (See *Research Relating to Children, Bulletin 22*, May-December 1967, Study 22-DA-3, p. 16.)

Duration: September 1965-continuing.

Cooperating group(s): (1) U.S. Office of Economic Opportunity. (2) Carnegie Corporation, New York. (3) Head Start; Office of Child Development; Office of Human Development; U.S. Department of Health, Education, and Welfare.

40-AA-16 LEARNING OF INCENTIVE VALUE IN CHILDREN

Investigator(s): Jum C. Nunnally, Ph.D., Professor, Department of Psychology, Vanderbilt University, Nashville, Tennessee 37203.

Purpose: To study the learning of incentive value in children through the use of reward conditioning.

Subjects: Elementary school children, ages 7 to 11.

Methods: Neutral objects (usually nonsense syllables) are associated with receipts of reward, nonreward, and loss of reward in various types of research designs. The amounts and kinds of condition reward value are measured in relation to verbal evaluation, reward expectancy, choice behavior, and measures of selective attention.

Findings: Various consistent effects have been found on the dependent measures, and the research paradigms have been able to differentiate many treatment conditions concerned with secondary rewards.

Duration: 1963-continuing.

Cooperating group(s): Office of Education; U.S. Department of Health, Education, and Welfare.

Publications: (1) Rileigh, K.K. and Nunnally, J.C. A new measure of semantic appraisal for studies of secondary rewards. *Psychonomic Science*, 1970, 18, 203-205. (2) Wilson, W.H. and Nunnally, J.C. A naturalistic investigation of acquired meaning in children. *Psychonomic Science*, 1971, 23, 149-150.

40-AA-17 CHILDHOOD PSYCHOSIS

Investigator(s): Rudolf Ekstein, Ph.D., Director, Childhood Psychosis Project; Seymour W. Friedman, M.D., Director, Clinical Services; Peter Landres, M.D., Staff Psychiatrist; Beatrice M. Cooper, M.A., Senior Research Social Worker; and Joel Liebowitz, Ph.D., Clinical Research Psychologist, Reiss-Davis Study Center, 9760 West Pico Boulevard, Los Angeles, California 90035.

Purpose: To develop better diagnostic and treatment methods for childhood psychosis; and to investigate psychoanalytic methods of treatment, the use of support systems, and work with parents, collaborating agencies, schools, and hospitals.

Subjects: 10 children, ages 5 to 20.

Methods: Data were gathered through tape recordings of psychotherapy sessions, therapists' summaries of sessions, and repeated psychological tests. The use of *distance* as a psychological mechanism will be investigated. (See *Research Relating to Children, Bulletin 18*, March-December 1964, Study 18-L-36, p. 58; and *Bulletin 20*, October 1965-May 1966, Study 20-IA-1, p. 72.)

Duration: 1957-continuing.

Publications: (1) *Children of time and space, of action and impulse*. New York: Appleton-Century-Crofts, 1966. (2) *The challenge: Despair and hope in the conquest of inner space*. New York: Brunner/Mazel, 1971. (3) Ekstein, R. and Friedman, S.W. Do you have faith that I'll make it? *Reiss-Davis Clinic Bulletin*, 1971, 8(2). (4) Rubin, K. The flawed hammer. *Reiss-Davis Clinic Bulletin*, 1971, 8(2). (5) Cooper, B. The flawed triangle. *Reiss-Davis Clinic Bulletin*, 1971, 8(2). (6) Liebowitz, J.M. Transformation of the flaw - Re-evaluation via psychological testing. *Reiss-Davis Clinic Bulletin*, 1971, 8(2). (7) Ekstein, R. and Wax, D. Fusion and diffusion of memory and perception in childhood psychosis in relation to psychotherapeutic innovations. *Reiss-Davis Clinic Bulletin*, 1972, 9(2). (8) Ekstein, R.; Friedman, S.; and Caruth, E. The psychoanalytic treatment of childhood schizophrenia. In B.B. Wolman (Ed.), *Manual of child psychopathology*. New York: McGraw-Hill, 1972. Pp. 1035-1057.

A SURVEY OF THE NUTRITIONAL STATUS OF BRITISH SCHOOL CHILDREN

Investigator(s): Judith Cook, M.B., B.Chem., Lecturer; Douglas Altman, B.Sc., Lecturer; W.W. Holland, M.D., F.F.C.M., Professor; and S.G. Topp, B.Sc., Dip.Stat., Lecturer, Department of Clinical Epidemiology and Social Medicine, School of Medicine, St. Thomas's Hospital, London S.E. 1, England; and A. Elliott, M.D., D.P.H., County Medical Officer, Kent County Council, Kent, England.

Purpose: To examine the dietary intake of school children and investigate its relationship to health and socioeconomic factors; and to explore the extent and nature of poor nutrition.

Subjects: 1,017 children, born between 1953 and 1955 or between 1958 and 1960, residing in and attending Local Authority schools in four areas in Kent, England. The sample was stratified by social class, family size, and weight. Higher sampling fractions were taken for children (1) from larger families, (2) from lower social classes, (3) with no fathers, and (4) with low weights, in order to have adequate numbers of subjects in those groups suspected of having the greatest likelihood of deficiency.

Methods: Field work for each child, conducted between September 1968 and March 1970, was comprised of a weighted diet record, a socioeconomic questionnaire, and a medical examination. The weighted diet record was kept for 1 week and was closely supervised by a trained field worker. The same field worker administered the socioeconomic questionnaire which elicited information on family structure, father's occupation, mother's education and working status, the child's health history and eating pattern, and the parents' heights. The medical examination, carried out by one of two medical officers, included a clinical assessment of the nutritional status of the child; measurements of height, weight, triceps and subscapular skinfold thickness, arm circumference, and peak expiratory flow rate. The medical examination also noted clinical evidence of vitamin deficiency.

Duration: 1968-continuing.

Cooperating group(s): Department of Health and Social Security.

Publications: (1) Cook, J. *et al.* A survey of the nutritional status of school children. Relation between nutrient intake and socioeconomic factors. *British Journal of Preventive Social Medicine*, 1973, 27, 91-99. (2) Topp, S.G.; Cook, J.; and Elliott, A. Measurement of nutritional intake among school children. *British Journal of Preventive Social Medicine*, 1972, 26, 106.

RESEARCH AND GUIDANCE LABORATORY SUPERIOR STUDENT PROJECT

Investigator(s): Marshall P. Sanborn, Ph.D., Director; and Charles Pulvino, Ph.D., Associate Director, Research and Guidance Laboratory, University of Wisconsin, 1025 West Johnson, Madison, Wisconsin 53706.

Purpose: To develop and demonstrate procedures for the identification and description of multi-potential and promising youths; to study the guidance and educational development of human potential; and to serve as a demonstration and development center for counseling, guidance, and planning activities for all cooperating high schools.

Subjects: This is a longitudinal sample now numbering 3,700 males and females, ages 14 to 30, from 90 Wisconsin school systems, whose average mental test scores are in the upper three to five percent of students in their age range and grade in school. Subjects are selected using criteria designed to identify multipotential youths in grade 9. These criteria include aspects of the student's vocabulary, spoken and written communication, reading background, range of interests, school performance, creativity, and learning behavior.

Methods: Subjects visit the laboratory facilities for 1 day at least once during their period of high school attendance. Arranged activities include testing and evaluation, analysis of written and oral performances, visits to classes and laboratories, and conferences with university staff members in any area of interest. These activities are designed to (1) broaden students' horizons with respect to educational and vocational opportunities, (2) develop realistic self-concepts about their own

strengths and interests, (3) foster plans for suitable educational programs, (4) discover methods for overcoming limitations, (5) encourage development of personal and academic strengths, and (6) provide counsel on matters that may influence the individual student's fullest development. Findings are interpreted and implications are considered with the student in individual counseling sessions. Laboratory staff teams (1) visit students' schools and hold conferences with the parents of each participating child to inform parents about characteristics of their children which they may not know; (2) stimulate action of parents to meet their child's developmental needs; (3) facilitate communication between the parents, school, and student; and (4) discover points of view and other parental characteristics which affect the student's development. A written report regarding each individual student is sent to his or her school containing information about the student's performance, interests, and needs, as well as suggestions the school could implement to provide desired educational or personal experiences. Inservice training sessions are held to discuss specific students, suggestions to the school, and general principles for guidance and education for superior students. Objectives of these training sessions are (1) stimulation of and assistance with the processes of identification of superior students; (2) encouragement and assistance in making special provision for the development of superior students, and stimulation to do so for other students; (3) provision of information about educational and vocational requirements and opportunities particularly applicable to superior students; (4) encouragement of innovation and experimentation in school procedures for superior students as well as for other students; and (5) demonstration of appropriate guidance services for high school students. Although there are difficulties in obtaining adequate control groups, some research studies have been done comparing laboratory participants with other students matched on academic, familial, school, and community variables. In addition, comparisons of the effectiveness of two or more procedures for accomplishing a particular guidance goal have been made in other laboratory research studies.

Findings: The Research and Guidance Laboratory is a cooperative effort which has maintained direct, personal, longitudinal, and functional relationships between the University of Wisconsin and 3,700 top students, their parents, and their teachers throughout Wisconsin (See *Research Relating to Children, Bulletin 22*, May-December 1967, Study 22-QA-1, p. 83.) More than 97 percent of all student participants who have graduated from high school have enrolled in higher education programs. Many have gone on to graduate and professional study. As a group, these young people have established a very outstanding record in college.

Duration: 1957-continuing.

Cooperating group(s): (1) Office of Education; Education Division; U.S. Department of Health, Education, and Welfare. (2) Ninety cooperating school systems in Wisconsin.

Publications: (1) Laboratory monograph: Research on the gifted and talented student, 1976. (2) Sanborn, M.P. and Niemiec, C.J. Identifying values of superior high school students. *School Counselor*, March 1971. (3) Bradley, R.W. and Sanborn, M.P. Ordinal position of high school students identified by their teachers as superior. *Journal of Educational Psychology*, 1969, 60(1), 41-45. (4) Mowsesian, R.; Heath, R.G.; and Rothney, J.W.M. Superior students' occupational preferences and their fathers' occupations. *Personnel and Guidance Journal*, November 1966. (5) Refer to *Education Index* for other publications related to this project.

40-AA-20 PANEL STUDY OF FAMILY INCOME DYNAMICS

Investigator(s): James N. Morgan, Ph.D., Program Director; and Greg Duncan, Ph.D., Study Director, Institute for Social Research, University of Michigan, P.O. Box 1248, Room 3063, Ann Arbor, Michigan 48106.

Purpose: To measure changes in economic well being and explain them by following a representative sample of families over time, monitoring their economic status, employment experiences, housing, transportation, food consumption, attitudes, and behavior patterns.

Subjects: A national probability sample oversampling lower income families but weighted to provide unbiased estimates. All individuals from the original 1968 sample of families are retained.

Methods: Families containing sample members are interviewed each year. Personal interviews were conducted during the first 5 years; currently families are contacted by telephone. The 1976 interview (9th year) included a supplemental interview with wives. The questionnaire used has a very detailed income sequence. An achievement motivation and a cognitive skills sentence completion test was included in 1972. Many attitude measures were included in the interviews during the first 5 years. Since the study follows children who leave parental homes, there are now 1,500 individuals who were children in 1968 and are now heads of households, for which there is information reported by parents in the early years of the study.

Duration: 1967-continuing.

Cooperating group(s): Office of the Assistant Secretary for Planning and Evaluation; U.S. Department of Health, Education, and Welfare.

Publications: *Five thousand American families. Patterns of economic progress*, Vols. 1-5. Ann Arbor, Michigan: Institute for Social Research, 1974-1977.

40-AA-21

ST. LOUIS BABY STUDY

Investigator(s): Thomas E. Jordan, Ed.D., Graduate Dean and Director of Research, Graduate School and Office of Research, University of Missouri, 8001 Natural Bridge Road, St. Louis, Missouri 63121.

Purpose: To describe developmental patterns of children; and to identify factors influencing physical and cognitive attainment.

Subjects: Of three cohorts of children the most important has been the second, a set of 1,008 babies born in St. Louis between Winter 1966 and Spring 1967.

Methods: This study incorporates data from biological, behavioral, and social information on the development from birth of 1,000 children. The cohort is comprised of children from families of all social classes, and ethnic and income levels. Cooperation was consistent across subjects. Information was collected through individual case studies in which families were visited by caseworkers at scheduled times. The hypothesis tested is that there is a statistically significant relationship between a set of predictors and criteria. Data were gathered on predictor variables grouped under the headings child, mother, and ecology. Child predictors included birthweight, Apgar score, sex, biological risk status at birth, a measure of development at 12 months using the Jordan Ad Hoc Scale of Development (AHSD), and weight at 12 months. The AHSD was developed to elicit information during interviews with unsophisticated mothers. Validity of the instrument is indicated by a statistically significant correlation between 12-month Ad Hoc scores and the 24-month Binet mental age measure. Maternal predictors included an anxiety score 6 months postpartum, age at delivery, IQ, an authoritarian score, childrearing ideology, and marital status. Ecological data included race and several measures of socioeconomic status at various ages. Measurements of cognitive attainment were taken at ages 2, 3, 4, 5, 6, 7, and 8. Criteria were (1) age 2: the intellectual score of the Preschool Attainment Record (Doll, 1966) and the Verbal Language Development Scale (Mecham, 1959); (2) age 3: the Peabody Picture Vocabulary Test, Form A (Dunn, 1965); (3) age 4: the Boehm Test of Basic Concepts and the Preschool Inventory (Caldwell, 1970); (4) age 5: the Illinois Test of Psycholinguistic Abilities, Auditory Association and Auditory Sequential Memory Subtests, and the Wechsler Preschool and Primary Scale of Intelligence Vocabulary Subtest; (5) age 6: the Coloured Progressive Matrices, Peabody Picture Vocabulary Test (B), and Wepman's test of Auditory Discrimination; (6) age 7: the WRAT Reading Test, and Fulton's Test of Occupational Knowledge; (7) age 8: the SESAT Reading Test, and a classroom rating scale; (8) age 9: the Rubin-Balow School Behavior Profile; (9) at all ages, birth to age 11 (ad hoc) height and weight are recorded; (10) at all ages, measures of maternal values and family characteristics are gathered. The multiple linear regression model developed by Bottenberg and Ward, and Kopley's Automatic Interaction Detector program (AID-4) are used in statistical analysis of the data.

Duration: 1960-continuing.

Publications: (1) Jordan, T.E. *Old Man River's children*. Academic Press (in press). (2) Ernhart, C.B.; Spaner, S.D.; and Jordan, T.E. Validity of selected preschool screening tests. *Contemporary Educational Psychology*, 1977, 2, 78-89. (3) Jordan, T.E. Developmental factors influencing exceptional status at age six years. *Contemporary Educational Psychology*, 1976, 1, 1-16. (4) Jordan, T.E. *The mentally retarded* (4th Ed.). Merrill Books, 1976 (contains original data from the study). (5) Jordan, T.E. Influences on preschool cognitive attainment. *MLRV Monographs*, 1976, 6(1). (6) Jordan, T.E. The natural history of 1,008 infants in the preschool years. National Institute of Education, 1974. (7) Jordan, T.E. *Development and disability at age four: A prospective longitudinal study*. CEMREL, Inc., 1972. (8) Jordan, T.E. Early developmental adversity and the first two years of life. *Multivariate Behavioral Research Monographs*, 1971, 6(1).

40-AA-22

CHILDREN'S CANCER STUDY GROUP

Investigator(s): Denman Hammond, M.D., Chairman, Children's Cancer Study Group, School of Medicine, University of Southern California, 1721 Griffin Avenue, Los Angeles, California 90031.

Purpose: To improve the treatment of childhood cancers through controlled clinical trials of newly developed therapies and combinations of therapeutic modalities carried out by multidisciplinary teams.

Subjects: 4,000 pediatric patients each year, ages 0 to 21, both leukemic and solid tumor patients.

Methods: Data collection and management are carried out in the group's Operations Office located at the University of Southern California School of Medicine in Los Angeles. All patient data are computerized and analyzed by the statistical staff of the Operations Office.

Duration: 1955-continuing.

Cooperating group(s): (1) National Cancer Institute, Division of Cancer Treatment, Clinical Investigations Branch. (2) Twenty-three researchers at university medical schools and children's hospitals throughout the United States and Canada including: University of Michigan, Ann Arbor; Children's Hospital of the District of Columbia; Children's Hospital of Los Angeles; Babies Hospital, New York; Children's Hospital of Pittsburgh; Children's Hospital of Columbus; Children's Orthopedic Hospital, Seattle; University of Wisconsin, Madison; University of Minnesota, Minneapolis; University of Utah Medical Center, Salt Lake City; Children's Memorial Hospital, Chicago; Princess Margaret Hospital, Toronto; University of Texas, San Antonio; University of Rochester, New York; Children's Hospital of Milwaukee; Children's Hospital of Philadelphia; Cornell Medical Center, New York; Indiana University, Indianapolis; New Jersey College of Medicine, Newark; Harbor General Hospital, Torrance; University of California, San Francisco; Children's Hospital of Louisville; and University of British Columbia, Vancouver.

Publications: A list of publications is available from the investigator.

40-AA-23

CRANIOFACIAL GROWTH STUDIES OF AUSTRALIAN ABORIGINALS

Investigator(s): Tasman Brown, D.D.Sc., F.R.A.C.D.S., Professor, Department of Restorative Dentistry; and G.C. Townsend, Ph.D., Lecturer, Department of Oral Biology, University of Adelaide, Box 498 G.P.O., Adelaide, South Australia 5001.

Purpose: To correlate morphological characteristics, functional relations, and patterns of growth and development from childhood through adolescence to young adulthood; and to study genetic family variation in metric characters of the dentition.

Subjects: Children of pure Aboriginal ancestry, ages 6 to 20. 1,717 sets of dental casts were made for 446 boys and girls; and 1,169 sets of skull roentgenograms, for 250 boys and girls.

Methods: Field visits to Central Australia were made each year from 1961 to 1971. Semiautomatic methods of data recording, using electronic digitizing instruments, have been developed to obtain measurements from dental casts and skull roentgenograms. Genealogical records and somatometric data were also obtained. Multivariate analysis of data has included factor analysis, discriminant function, and intraclass correlation methods.

Findings: Reports have been concerned with metric characters of the dentition, skeletal maturation, the timing and sequence of tooth emergence, craniofacial morphology and growth, and general body growth. Growth standards have been developed for Australian Aborigines.

Duration: 1961-continuing.

Cooperating group(s): Australian Institute of Aboriginal Studies, Canberra, Australia.

Publications: (1) Townsend, G.C. and Brown, T. *Tooth size characteristics of Australian Aborigines*. Australian Institute of Aboriginal Studies, 1977. (2) Brown, T. and Grave, K.C. Skeletal maturation in Australian Aborigines. *Australian Paediatrics Journal*, 1976, 12, 24-30. (3) Townsend, G.C. Tooth size variability in Australian Aborigines: A descriptive and genetic study. Ph.D. Thesis, University of Adelaide, 1976.

40-AA-24

THE ABERDEEN CHILD DEVELOPMENT STUDY

Investigator(s): Fiona Wilson, B.A., Research Psychologist; Barbara Thompson, Ph.D., Research Sociologist; and Raymond Illsley, Ph.D., Professor of Medical Sociology and Director; Medical Sociology Unit, Institute of Medical Sociology, Medical Research Council, Westburn Road, Aberdeen AB9 2ZE, Scotland.

Purpose: To determine the causal sequences underlying the relationship between levels of physical growth, intellectual functioning, physical functioning, and family patterns of reproduction, specific events of pregnancy, labor and puerperium; and to investigate the antecedents of educational performance for an entire population.

Subjects: All children born in Aberdeen City from 1950-1955, and one-fifth of their mothers.

Methods: The causal sequences are complex and may involve genetic inheritance, physiological or neurological damage, and socialization experiences between birth and the school years. In cases of severe handicap it may be possible to identify congenital or obstetric antecedents, even though precise knowledge of the mechanism may be lacking, but postnatal events may also reinforce or mitigate the original handicap. With less severe handicap where no neurological signs are evident and where, in general, incidence is heavily skewed toward poorer socioeconomic groups and larger families, social transmission through familial and educational processes of socialization is clearly most relevant. Again, however, the mechanisms of transmission need to be explored. Medical data relating to all births in Aberdeen City between 1950 and 1955 are being analyzed against a variety of social, educational, and psychological test material collected on these children during their school years. The Reading Survey data include the results of reading tests administered in 1962; IQ and attainment scores from routine testing in the schools at various ages; sociometric test results; behavioral questionnaires filled out by class teachers; extracts from school medical records and a variety of social, demographic, and school experience data. Inevitably, some of the children are siblings. A one in five sample of the children's mothers were interviewed at length concerning the family situation in general and the index child in particular. Data are available on magnetic tape. These data have already been used to some extent to study certain specific topics including mental subnormality, low birthweight, and delinquency. However, the main aim of the current project is to explore the maximum amount of data to investigate the various antecedents of educational performance for the population as a whole. Some analyses of data currently in progress include an investigation of the association between birthweight and length of gestation, and later school performance; the antecedents and the consequences for the child of having a teen-age mother.

Duration: 1962-continuing.

Publications: Birch *et al.* *Mental subnormality in the community*. Baltimore: Williams and Wilkins, 1970.

GROWTH AND DEVELOPMENT

General

40-BA-1 PROYECTO VENEZUELA

Investigator(s): Hernán Méndez Castellano, M.D., President, Foundation Center of Biological Studies on Growth and Development of the Venezuelan Population (FUNDACREDESA), Quinta "Calei," 8a. Avenida (entre 6a. y 7a. transversales) Altamire, Caracas - 106, Distrito Federal, Venezuela.

Purpose: To conduct a national growth and development study of Venezuelan children and adults.

Subjects: Approximately 70,000 randomly selected Venezuelan children, ages 0 to 20; plus samples of adults, ages 20 to 30, and ages 30 to 40. All subjects were born in Venezuela to a native born Venezuelan.

Methods: Types of information collected included (1) anthropometric data, including X-ray for bone age in 10 percent of the sample, clinical appraisal for blood pressure, thyroid size, hair color and texture, and sexual maturation; (2) biochemical - endocrine data; (3) psychological evaluation and neurological examination for 10 percent of the sample; (4) dental development; and (5) evaluation of the alimentary situation (including data on subjects' families).

Duration: January 1976-December 1978.

Cooperating group(s): (1) Instituto Nacional de Nutrición. (2) Universidad Central de Venezuela. (3) Universidad Simón Bolívar.

Publications: Castellano, H.M. *et al. Proyecto Venezuela*. Caracas: Republica de Venezuela Presidencia, Comisión Presidencial Para Estudios de Crecimiento y Desarrollo Humano, 1976.

Physical

40-CA-1 GONADOTROPIN FEEDBACK MECHANISMS IN CHILDREN WITH GONADAL DYSFUNCTION

Investigator(s): Ruth P. Owens, M.D., Assistant Professor of Pediatrics, School of Medicine, University Hospitals, Case Western Reserve University, Cleveland, Ohio 44106.

Purpose: To investigate gonadotropin feedback mechanisms in children with gonadal dysfunction.

Subjects: 25 children, ages 1 month to 25 years.

Methods: An evaluation will be conducted of gonadotropin levels and responsiveness to hormone replacement in children, and replacement in children of appropriate pubertal effects. Side effects of hormone replacement in these older children will be evaluated.

Findings: Gonadotropins are operating in feedback relationship with estrogen in girls long before pubertal ages. Sensitivity to estrogen is decreasing with age.

Duration: 1966-continuing.

Cooperating group(s): General Clinical Research Center, University Hospitals, Cleveland, Ohio.

40-CA-2**MINOR PHYSICAL ANOMALIES IN HYPERACTIVE, MENTALLY RETARDED, AND NORMAL CHILDREN**

Investigator(s): Philip Firestone, Ph.D., Clinical Psychologist; and Susan Peters, B.A. (Hons.), Psychometrist, Children's Hospital of Eastern Ontario, 401 Smyth Road, Ottawa, Ontario, Canada K1H8L1.

Purpose: To assess whether minor physical anomalies (MPA) occur differentially in the families of hyperactive, mentally retarded, and normal children; and to assess whether the presence of these MPA is a predictor for the development of behavioral or intellectual difficulties.

Subjects: 60 hyperactive, mentally retarded, and normal male target subjects, ages 4 to 14; their parents; and siblings.

Methods: Subjects and their parents and siblings were examined for the presence of MPA using the scoring method of Waldrop and Halverson (1971). Conner's rating scales and Peterson & Quay Behavior Problem Checklist were completed by parents and teachers for the target subjects. Data were analyzed for the correlation of MPA with behavior problems, drug response, and impulsivity.

Findings: Hyperactive and mentally retarded children and their families do not differ on number of anomalies present, but both these groups have more anomalies than normal children and their families.

Duration: Completed.

Publications: (1) Firestone, P. *et al.* Minor physical anomalies in hyperactive, retarded and normal children and their families. *Journal of Child Psychology and Psychiatry* (in press). (2) Firestone, P. *et al.* The effects of caffeine and methylphenidate on hyperactive children. *American Journal of Child Psychiatry* (in press). (3) Firestone, P.; Wright, H.P.; and Douglas, V. The effects of caffeine on hyperactive children. *Journal of Learning Disabilities* (in press).

40-CA-3**DIETARY AND PSYCHOSOCIAL FACTORS IN BLOOD PRESSURE LEVELS IN CHILDREN**

Investigator(s): Paul M. Insel, Ph.D., Senior Research Scientist, American Institutes for Research, 1791 Arastradero Road, Palo Alto, California 94302; and Roland Phillips, M.D., D.P.H., Professor; Phyllis M. Williams, Ph.D., M.P.H., Assistant Professor, Department of Biostatistics and Epidemiology; and Ralph D. Harris, M.B.Ch.B., Director, Department of Pediatric Nephrology, School of Health, Loma Linda University, Loma Linda, California 92354.

Purpose: To determine the relationship of dietary habits, psychosocial factors, and physical fitness to the blood pressure levels of children; and to determine whether these factors are antecedents to hypertension.

Subjects: 9,000 boys and girls, ages 6 to 16, attending public and Seventh-Day Adventist schools in San Bernardino County, California: 1,100 Blacks, 1,200 Mexican-Americans, and 6,700 Whites. There was a minimum of 30 subjects per age group.

Methods: The study consists of four phases. Phase I involves the screening of the 9,000 subjects, 5,500 of whom will be from the public schools, and approximately 3,500 from Seventh-Day Adventist (SDA) parochial schools. The study population for Phase II will be chosen from this population by taking those children whose systolic blood pressure is in the upper 15 percent and those whose systolic blood pressure is in the lower 15 percent of their age-sex brackets, plus a 15 percent sample from the middle of the distribution. Separate cut-off points will be used for SDA and non-SDA groups. In this way, a sample of approximately 1,800 children will be seen in the schools on three separate occasions for 1 hour. During that hour they will have their blood pressure taken twice, and will also fill out psychosocial instruments and supply information about their dietary habits. Also, during one of these 3-hour visits they will be given a physical fitness test. The children's parents will be seen in their homes to obtain two blood pressure measurements, height and weight, and information on lifestyle. In Phase III, approximately 100 pairs of children and parents from the Phase II population will be studied in greater detail in regard to dietary and psychosocial factors. Forty of these pairs will be discordant and 80 concordant on systolic blood

pressure levels. During Phase IV, those SDA students who have moved from day academies to boarding academies will have their blood pressure rechecked, in order to see if the change in social environment has had any effect on blood pressure levels.

Duration: July 1976-August 1981.

Cooperating group(s): National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

40-CA-4 HUMAN CHROMOSOME STRUCTURE, FUNCTION, AND BEHAVIOR

Investigator(s): Frederick Hecht, M.D., Professor of Pediatrics, Genetics Clinic, CCD/CDRC, Health Sciences Center, University of Oregon, P.O. Box 574, Portland, Oregon 97207.

Purpose: To study the relationships between chromosome structure and function.

Subjects: Approximately 100 subjects a year, both sexes, all ages.

Methods: The research methodology includes standard cell culture and chromosome bonding techniques and standard human biochemical techniques.

Findings: Position effects occur in some chromosome rearrangements.

Duration: 1974-1980.

Cooperating group(s): National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: Information is available from the investigator.

40-CA-5 SAFETY AND EFFICACY OF PHOTOTHERAPY FOR NEONATAL HYPERBILIRUBINEMIA

Investigator(s): Harold M. Maurer, M.D., Chairman, Department of Pediatrics; and N. McWilliams, M.D.; B. Kirkpatrick, M.D.; D. Draper, M.D.; E. Myer, M.D.; R. David, M.D.; J. Crowley, Ph.D.; and M. Lenhardt, Ph.D., Medical College of Virginia, Richmond, Virginia 23298.

Purpose: To investigate the safety and the efficacy of phototherapy for neonatal hyperbilirubinemia.

Subjects: Approximately 300 newborn infants.

Methods: The research design included a randomized study of phototherapy vs. no phototherapy, prophylactically and therapeutically. The children were followed up longitudinally when they were a year old and 2 years old.

Duration: 1974-1980.

Cooperating group(s): (1) University of Cincinnati. (2) University of California, Los Angeles. (3) State University of New York, Downstate, Albert Einstein College of Medicine. (4) National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

40-CB-1 PITUITARY FUNCTIONING IN CHILDREN WITH SHORT STATURE

Investigator(s): Ruth P. Owens, M.D., Assistant Professor of Pediatrics, School of Medicine, University Hospitals, Case Western Reserve University, Cleveland, Ohio 44106.

Purpose: To investigate pituitary functioning in children with short stature.

Subjects: 40 girls and boys, ages 1 to 23, with all degrees of pituitary deficiency; plus children being evaluated for deficiencies, found to be normal.

Methods: An evaluation is conducted of endocrine function before and after growth hormone treatment. An evaluation is made of the effectiveness of other hormone treatment before and after growth hormone treatment. The effectiveness of various dose and administration schedules of growth hormone on growth is also evaluated.

Findings: Growth response is dose related, dose frequency may be decreased from standard, and growth hormone is necessary for some sex steroid action.

Duration: 1962-continuing.

Cooperating group(s): General Clinical Research Center, University Hospitals, Cleveland, Ohio.

40-CC-1 OPTOMETRIC THERAPY OF DIVERGENCE EXCESS STRABISMUS

Investigator(s): Stanley G. Goldrich, Ph.D., Assistant Professor of Optometry, State College of Optometry, State University of New York, 100 East 24th Street, New York, New York 10016.

Purpose: To evaluate the effectiveness of treatment of divergence excess strabismus.

Subjects: 19 female and 9 male subjects, ages 5 to 35, diagnosed as divergence excess strabismics, who are being treated at the State University of New York Optometric Center.

Methods: A multidimensional approach of monocular and binocular procedures was used to treat the patients.

Findings: Results compared favorably with the antismpression therapy used in similar studies. Success rates of 71.4 percent (excellent), 10.7 percent (good), 14.3 percent (fair), and 3.6 percent (poor) were obtained. These results are compared with studies done by orthoptists. Factors of motivation, cooperation, and patient maturity significantly affect the success of therapy.

Duration: 1975-completed.

40-CC-2 DEVELOPMENT OF OCULAR ACCOMMODATION

Investigator(s): Martin Banks, Ph.D., Assistant Professor, Department of Psychology, University of Texas, Austin, Texas 78712.

Purpose: To study the development of focussing ability in young infants.

Subjects: 50 infants, ages 3 to 14 weeks.

Methods: A between- and within-subjects design was used to compare accommodative ability across age. Retinoscopy was used to measure accommodation.

Findings: By 2 months of age, infants' accommodation is essentially as good as that of adults.

Duration: May 1977-completed.

Cooperating group(s): University of Texas, Institute of Human Development and Family Studies.

40-CC-3 INFANT CONTRAST SENSITIVITY FUNCTION

Investigator(s): Martin S. Banks, Ph.D., Assistant Professor, Department of Psychology, University of Texas, Austin, Texas 78712.

Purpose: To characterize the form vision of 1-, 2-, and 3-month-old infants.

Subjects: Six 1-month-old infants; six 2-month-old infants; and eight 3-month-old infants, clinically normal, both sexes.

Methods: The fixation preference paradigm is being used to determine what aspects of visual form can be perceived by young infants. Five types of visual form are presented, each at various contrast levels, until the infants' thresholds for each type of form can be estimated.

Findings: Results in May 1977 indicate that acuity is approximately 20/250 at 1 month, 20/220 at 2 months, and 20/150 at 3 months. Lateral inhibition is generally present at 2 and 3 months, but not at 1 month. There is a continuous increase in sensitivity to contrast from 1 to 3 months.

Duration: June 1975-June 1979.

Cooperating group(s): University of Minnesota, Institute of Child Development.

Publications: Banks, M.S. and Salapatek, P. Contrast sensitivity function of the infant visual system. *Vision Research*, 1976, 16, 867-868.

40-CC-4**HABITUATION RESPONSE IN INFANTS:
ASSESSMENT IN THE FIRST 10 DAYS OF LIFE**

Investigator(s): Ed Hammer, Ph.D., Associate Professor and Director of Education; and Carol Niman, O.T.R., M.S., University Affiliated Center for Developmentally Disabled Children, University of Texas, 3801 Herschel, Dallas, Texas 75219.

Purpose: To determine if differences exist between low birthweight infants and normal range birthweight infants in their ability to decrease responding to repeated sensory stimuli; and to determine if differences exist within the two populations when tested at 3 days and again at 10 days of age.

Subjects: Five neonates who were high risk due to birthweight; and five neonates of normal birthweight range, matched for sex, race, and socioeconomic status. All were full-term infants.

Methods: The infants were all tested in the hospital on the third day and at home on the tenth day. Test scores were obtained by using four subtests of the Brazelton Neonatal Assessment Scale: Response Decrement to Light, Response Decrement to Rattle, Response Decrement to Bell, and Response Decrement to Pinprick. The statistical analysis was done by using the Mann-Whitney U Test to determine differences between populations, and the Wilcoxon Matched Pairs Signed-Ranks Test within samples, using age as the variable.

Findings: A significant difference resulted from three of the four subtests when low birthweights and normal range birthweights were compared at 3 days, but not at 10 days. No difference was found at 3 days on the Response Decrement to Rattle. Also, no significant difference was noted when each group was compared with itself on the two separate testing occasions. It was concluded that perhaps the differences that were found at 3 days were due to the limited environmental exposure of the low birthweight babies, since they were in Isolettes at the time.

Duration: January 1977-October 1977.

Cooperating group(s): (1) Health Science Center, Dallas. (2) Parkland Hospital, Dallas. (3) University of Texas, Dallas. Program in Special Education.

40-CC-5**PERIODICITY PITCH PERCEPTION IN YOUNG INFANTS**

Investigator(s): Robert S. Bundy, Ph.D., Assistant Professor, Department of Psychology, State University of New York, 4230 Ridge Lea Road, Buffalo, New York 14226.

Purpose: To discover if infants are able to perceive a fundamental frequency in complex tones.

Subjects: Normal 2-month-old infants.

Methods: Infants are habituated to various complex tones with the same inferred fundamental, and then another complex tone is presented with a different inferred fundamental to see if the infant will habituate. Heart rate is the dependent variable.

Duration: January 1978-July 1978.

40-CC-6**CENTRAL AUDITORY PROCESSING IN DYSLEXIC CHILDREN**

Investigator(s): Marilyn L. Pinheiro, Ph.D., Associate Professor/Neurosciences, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699.

Purpose: To study the performance of dyslexic children with normal hearing on central auditory processing of filtered words, simultaneous words and sentences, and tonal sequences.

Subjects: 40 children (approximately 90 percent boys), ages 6 to 15, classified as dyslexic by psychological and reading tests and performance in the school system.

Methods: Children are tested under earphones in an audiological environment in a sound treated booth using clinical audiological equipment. They are compared with normal peers by t-tests and analysis of variance. Test materials include basic hearing evaluation with pure tone audiometry and speech audiometry followed by a central auditory test battery including (1) Binaural Fusion of

filtered high-pass (in one ear) and low-pass (in the other ear) segments of spondaic words; (2) Alternating Sentences: the sounds alternate between the two ears every 300 msec.; (3) Low-pass Filtered Words: frequencies above 500 Hz are cut out of the words; (4) Staggered Spondee Words: a spondee in one ear overlaps a different spondee in the other ear; (5) Competing Sentences: the child attends to and repeats the softer of two different simultaneous sentences, one to each ear; (6) Simultaneous Sentences: both of the different sentences, one in each ear, must be repeated; and (7) Pitch Pattern Sequencing: the child reproduces by humming and then by pointing a pattern of three tone bursts involving two tones of one pitch and one tone of another pitch. **Findings:** By subdividing the experimental group into different age categories, it becomes apparent that the dyslexic children as a group improve with age on all tests. They are not significantly poorer than their normal peers on most central auditory tests. However, they are significantly poorer on left ear tasks when the central processing requires a united effort by both hemispheres of the brain. They perform very poorly on Pitch Pattern Sequencing when a manual response is required (probably necessitating interhemispheric processing). Six- to 7-year olds respond at chance level. The older children show an improvement but are still significantly below normal. However, they are able to hum the tonal patterns (probably right hemisphere mediated) normally. **Duration:** 1976-1978.

Cooperating group(s): (1) Maumee Schools. (2) National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: *COMMUNICATIVE DISORDERS: An Audio Journal for Continuing Education*, April 1978.

40-CC-7

DEVELOPMENT OF PITCH PATTERN SEQUENCING ABILITY IN NORMAL CHILDREN

Investigator(s): Marilyn L. Pinheiro, Ph.D., Associate Professor/Neurosciences, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699.

Purpose: To determine whether the ability to sequence patterns of three tone bursts (two of one pitch and one of another pitch; i.e., H-L-H, L-H-L, H-H-L, L-L-H, H-L-L, and L-H-H) precedes language development or depends on language development; to measure the development of this ability in relation to age in normal children; and to determine what durations were best for the on-time and off-time of the pattern tone bursts.

Subjects: 100 normal hearing school children: 25 children in each of four age groups: 6 to 7; 7 to 8; 8 to 9; and 9 to 10.

Methods: Each child was screened for normal hearing by pure tone audiometry. Each child was also given the Edinburgh Handedness Inventory to determine dominance and the Auditory Sequential Memory subtest of the Illinois Test of Psycholinguistic Abilities. A tall block was used for HIGH and a short block for LOW, and each child was trained to point to the blocks in the order of each member of a pair of tone bursts before being tested on the 3-tone sequences. There were 12 subsets of patterns with 20 patterns in each subset. Each set had a different on- and off-time combination.

Findings: With the longest on- (500 msec.) and off-times (300 msec.), the youngest group (6- to 7-year olds) are only about 60 percent accurate with a large standard deviation. Performance for all age groups generally decreases and standard deviations increase as on- and off-times are shortened. Accuracy improves with age and standard deviations decrease with age with the 9- to 10-year-old group performing as well as adults.

Duration: 1977-1978.

Cooperating group(s): (1) Maumee Schools. (2) National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

40-CD-1

NEONATAL FACIAL-POSTURAL PATTERNING DURING SLEEP

Investigator(s): Mats Nyström, Ph.D., Docent; Ylva Bandmann, M.A., Psychologist; and Ann Valentin, M.S., Psychologist, Psychological Laboratory, Lund University, Paradisgatan 5, 22350-Lund, Sweden.

Purpose: To study the effect of tactile-auditive disturbances, repeated approximately 18 times an hour, on the sleep patterns of neonates.

Subjects: 10 female and 8 male neonates, 3 to 4 days old.

Methods: Each infant received 1 hour of stimulation in which there were disturbances every third minute, and 1 hour of a control condition. Each subject was his/her own control. Registrations were made of facial-postural behaviors according to a 63-item catalog. Calculations were made of differences in frequencies before and after disturbances and during control vs. stimulus periods.

Findings: After auditive disturbance of neonatal sleep, a certain type of burst containing either the behaviors *contracted eyebrows* or *startle* is recorded at high and low levels of activity, respectively. Spontaneous differences in behavioral discharge exist.

Duration: 1974-1978.

Cooperating group(s): Swedish Council for Social Science Research.

Publications: *Psychological Research Bulletin*, Lund University, Sweden: Nos. 17.7, 1977; 17.5, 1977; 15.1, 1975; and 14.7, 1974.

40-CE-1

PREVALENCE OF NUTRITIONAL ANEMIAS IN CHILDREN

Investigator(s): Satya Gupta, F.R.C.P., D.C.M., F.A.A.P., Professor, Department of Pediatrics, M.A. Medical College and Associated Irwin and G.B. Pant Hospitals, New Delhi, India 110001.

Purpose: To investigate the prevalence of nutritional anemia; to investigate the relationship between dietary intake of haematinics to their serum values; and to observe the relationship between serum iron, folic acid, and B₁₂.

Subjects: 400 children, ages 3 months to 5 years, from a suburban community; and 75 children subjected to detailed haematological study ($H_b < 8$ gm%).

Methods: The 400 children were screened for presence of nutritional anemia. Seventy-five children with less than 8 gm% H_b were subjected to haemogram, serum iron, folic acid, vitamin B₁₂, and red cell folate. Their diets were assessed by using a questionnaire method. Values of the constituents were compared in diet and serum. Children were selected at random. Fifty children from the same community with normal nutritional statuses were used as controls. Data were treated to statistical analysis.

Findings: Prevalence of nutritional anemia — 84.25% microlytic hyp. anemia was the commonest in all age groups (3 to 36 months and 37 to 60 months). Diets were deficient mostly in calories and iron. Infection of the respiratory tract and GIT was very common (61.3% and 66.6%).

Duration: July 1975-July 1977.

40-CE-2

INFANT FOOD ADVERTISING AND MALNUTRITION IN ST. VINCENT

Investigator(s): Ted Greiner, M.A.Ed., M.S., Doctoral Candidate; and Michael Latham, M.D., M.P.H., Professor, International Nutrition, Division of Nutritional Sciences, Savage Hall, Cornell University, Ithaca, New York 14853.

Purpose: To examine the methods of infant feeding currently practiced in St. Vincent, West Indies; to determine whether these methods have been influenced by promotion practices of infant food companies; and to identify the relationships between these and other environmental variables in the etiology of malnutrition.

Subjects: 200 infants, ages 1 to 2, from two towns.

Methods: The senior investigator, who was accompanied by well-known, local health paraprofessionals, interviewed mothers or guardians of all infants in their homes. Infants' height and weight

were measured. Local commercial infant food marketing and promotion were studied. Data were analyzed using standard linear multiple regression.

Findings: Nearly all mothers breast fed; mean weaning age was 8 months. Most added bottle feeding early, beginning at a mean age of 1 month. Malnutrition was widespread. The mean weight for age was 85 percent of the Harvard standard. Mother's recall of advertising was strongly associated with pattern of feeding, which, in turn, was strongly related to nutritional status.

Duration: June 1975-completed.

Cooperating group(s): (1) Caribbean Food and Nutrition Institute. (2) Community Health Action Programme, St. Vincent.

Publications: A report, in the form of a Master's Thesis, is available from: Cornell University Libraries; Caribbean Food and Nutrition Institute Library; and Nutrition Library, Medical Department, St. Vincent.

40-CG-1

PRIMITIVE REFLEX PROFILE: EARLY MOTOR DIAGNOSIS

Investigator(s): Arnold J. Capute, M.D., M.P.H., Deputy Director and Director of Clinical Services; Pasquale J. Accardo, M.D., Assistant Professor; and Eileen P.G. Vining, M.D., Assistant Professor, Department of Pediatrics, John F. Kennedy Institute for Handicapped Children, Johns Hopkins University School of Medicine, 707 North Broadway, Baltimore, Maryland 21205.

Purpose: To identify neonates with significant motor problems by quantitating the Primitive Reflex Profile utilizing seven of these reflexes.

Subjects: 150 normal term neonates; and 220 high risk neonates. Infants of both sexes are being followed longitudinally from birth to 2 or 3 years of age. Approximately half of the children will have no history of perinatal risk factors, while the other half will have risk factors associated with the later development of motor disorders.

Methods: It is anticipated that a compilation of the quantitated primitive reflexes will indicate the time the child will perform functional motor activities such as sitting, walking, running, etc. The Primitive Reflex Profile (PRP), developed at the John F. Kennedy Institute, will be administered to the subjects. In addition to a neurodevelopmental examination, a Pechtl scale and a Brazelton examination will be done. These will be repeated periodically along with a Bayley scale administered at age 1 and at age 2. Normal newborns will be followed for a 2-year period, while motor involved children will be followed with a neurodevelopmental examination and PRP exam until age 3. Six examiners are involved in the research. Data will be computer analyzed.

Duration: July 1976-July 1981.

Cooperating group(s): (1) Division of Research; Maternal and Child Health Service; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) Johns Hopkins Hospital, Baltimore, Maryland. (3) Columbia Medical Plan, Columbia, Maryland. (4) Baltimore City Hospital. (5) Sinai Hospital, Baltimore, Maryland.

Publications: Capute, A.J. *et al.* *Primitive Reflex Profile*. Baltimore: University Park Press, 1978.

40-CG-2

CHILDREN'S BEHAVIOR IN STRUCTURED SPACE

Investigator(s): Richard Blakeley, Ph.D., Associate Professor, Department of Landscape Architecture; David Burke, Ph.D., Assistant Professor, Department of Child and Family Studies; and Terry Boyd, Ph.D., Professor, Department of Environment and Design, University of Wisconsin, Madison, Wisconsin 53706; and Lynda H. Schneekloth, Ph.D., Assistant Professor, College of Architecture, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

Purpose: To determine the salient features of physical design which affect motor and space responses of children; and to develop a research methodology capable of quantitatively measuring motor and space responses in relation to space.

Subjects: Three boys and three girls, ages 3 to 5. (There were approximately 10,000 data entries per child. Fifteen children were used in the study group, but data were taken on six children.)

Methods: Children's spontaneous play behavior was recorded on playgrounds. Playgrounds were designed in a 2 x 2 matrix employing variations on degree of manipulability and degree of object density. Children were videotaped in half-hour sessions for 4 weeks. Detailed data for motor behavior and use of space were transcribed by the SSR Event Recording System (potential entry 1/20 sec.), so incidence, coincidence, duration, and frequency of all behavioral categories were available for analysis. The environment was measured for complexity using the POCS measurement scale.

Findings: Regression analyses clearly suggest that play object complexity interacts with behavior in positive, linear fashion. Density, weather, and manipulability appear to be significant variables in behavior.

Duration: 1974-continuing.

40-CG-3

VESTIBULAR SELF-STIMULATION: CONSEQUENCES FOR VESTIBULAR AND MOTOR DEVELOPMENT IN INFANTS AND PRESCHOOL CHILDREN

Investigator(s): Constance W. Atwell, Ph.D., Professor, Department of Psychology, Pitzer College, Claremont, California 91711; and Edward M. Ornitz, M.D., Associate Professor of Psychiatry, Center for Health Sciences, University of California, Los Angeles, California 90024.

Purpose: To study self-rocking and head banging in normal children; to determine the relationship between motor coordination and rhythmic habits in infancy; and to determine the physiological correlates of rhythmic habits.

Subjects: Questionnaire study: 500 children, ages 8 months to 5 years, unselected for race or sex. Vestibular nystagmus and preschool motor development studies: 20 self-rockers and 20 non-rockers in each study (infants, ages 9 to 13 months; children, ages 4 to 6).

Methods: Questionnaires were distributed to collect data on incidence, socioeconomic status, sex ratio, attitudes toward self-rocking or head banging, and the circumstances under which the behaviors occur. Caretaker estimates there are 12 developmental milestones in infancy. Statistical analysis accounted for younger average age of self-rockers/head bangers. Vestibular development: Electronystagmography was employed to record rotation-induced vestibular nystagmus under controlled acceleration (looking at both primary and secondary nystagmus). Preschool motor development: The researchers are trying to develop a scale to assess good and superior motor coordination and balance, not deficits.

Findings: Nineteen percent of the normal infants are habitual self-rockers. Self-rockers are motorically advanced during infancy.

Duration: 1975-1979.

Cooperating group(s): (1) University of California, Los Angeles, Neuropsychiatric Institute, Department of Psychiatry. (2) National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare. (3) William Grant Foundation.

40-CH-1

BOEL: SCREENING FOR EARLY DISCOVERY OF COMMUNICATIVE DISORDERS

Investigator(s): Karin Stensland Junker, Ph.D., Associate Professor of Pediatric-Audiological Methodology, Department of Pediatrics, Karolinska Institutet, S-104 01 Stockholm, Sweden.

Purpose: To determine the causes of communicative disorders in children, who do not speak but who are hearing and/or seeing normally, in order to further communicative development through various kinds of stimulation.

Subjects: Swedish study: 616 infants, ages 3 to 12 months; and 480 infants, ages 2½ to 13 months. Finnish study: 1,062 infants, ages 7½ to 8½ months (516 girls and 546 boys).

Methods: Subjects were screened in well-baby clinics where infants came for examinations. Child welfare in Finland and Sweden covers 99 percent of all infants born. (See also *Research Relating to Children, Bulletin 34*, March-August 1974, Study 34-CA-1, pp. 37-38.)

Findings: Boys respond later than girls to communicative testing (approximately 4 weeks later at age 3 months) and their failure to respond stays higher through the whole age range tested.

Duration: January 1976-June 1978.

Cooperating group(s): (1) Child Welfare of Stockholm County Council. (2) Child Welfare and Child Clinic of Helsinki, Finland.

Publications: (1) A paper presented at the XV International Congress of Pediatrics, New Delhi, India, 1977: BOEL - Screening for early discovery of communicative disorders. (2) BOEL: A child welfare program for early screening of communication abilities. In *Early identification of hearing loss*. Basel, Switzerland: S. Karger, 1976.

Intellectual

40-DA-1 ASSESSING AND FACILITATING MANIPULATIVE CURIOSITY AND EXPERIMENTAL INQUIRY IN YOUNG CHILDREN

Investigator(s): W. Robert Kenzie, Ph.D., Research Officer IV, Ontario Institute for Studies in Education, 252 Bloor Street West, Toronto, Ontario, Canada M5S 1V6.

Purpose: To develop a set of situational tasks for idiographic assessment of manipulative curiosity and experimental inquiry; to use these tasks to explore and develop the inquiry climate that exists between child and interviewer (or teacher); and to compare the individual assessment with the child's inquiry behavior in the classroom.

Subjects: Two samples of five children in grade 1 or grade 2, balanced for sex. Children were selected randomly from an advanced private metropolitan school and from a small rural school.

Methods: Methods were developed (1) to use five task situations, each centered on a puzzling phenomenon; (2) to facilitate and develop intrinsically motivated experimental inquiry; and (3) to assess inquiry style idiographically. Subjects were given the five tasks. Detailed individual protocols were qualitatively analyzed, and the five tasks were evaluated in order to reliably assess six centrally important curiosity/inquiry qualities. The results were validated by classroom observation and teacher interviews.

Findings: The puzzling phenomenon task situations elicited idiosyncratic curiosity/inquiry qualities that were consistent in some cases. With very few exceptions, it was possible to describe each child's inquiry style in a way that applied to all five tasks. Positive development was obtained in inquiry climate qualities. Comparison with classroom observation yielded varying agreement.

Duration: September 1975-April 1978.

Cooperating group(s): University of Toronto, Institute of Child Study.

Publications: A paper, presented at the American Educational Research Association Meeting, 1977, is available from: ERIC Document Reproduction Service, Computer Microfilm International Corporation, 2020 - 14th Street, North, Arlington, Virginia 22201. Order No. ED 139 512 on microfiche or hard copy.

40-DA-2 ADAPTABILITY AND CREATIVITY IN RETARDED CHILDREN

Investigator(s): Ellen L. Nuffer, M.A., Doctoral Student; and Joseph L. French, Ed.D., Chairman, School Psychology Program, Pennsylvania State University, 101 Cedar Building, University Park, Pennsylvania 16801.

Purpose: To provide evidence for the best predictor (chronological age, mental age, creative thinking ability) of adaptive ability (ability to demonstrate skills learned in one setting in a novel situation).

Subjects: 21 boys and 11 girls, ages 6 to 13. All children are educable mentally retarded (IQ = 50 to 75) and attend public school classes. Some of the children are partially mainstreamed.

Methods: All of the subjects are given the Torrance Figural Test of Creative Thinking by the investigator using group administrations. All of the children receive a standard puzzle task by a teacher in the classroom, who has been taught this to 100 percent criterion. Total errors made during learning and the time taken are recorded. Then all of the children are asked to solve the same puzzle individually in an unfamiliar room with an unfamiliar male administrator. Change in errors and time equals adaptive ability. Creative thinking scores, mental ages (from records), and chronological ages are fitted into a regression equation to predict adaptive ability.

Duration: January 1978-March 1978.

Cooperating group(s): Bald Eagle Area School District, Wingate, Pennsylvania.

40-DB-1

LANGUAGE AND COGNITIVE DEVELOPMENT IN NORMAL AND DEVELOPMENTALLY DELAYED CHILDREN

Investigator(s): Sharon L. James, Ph.D., Assistant Professor; Carol S. Eagen, M.S., Lecturer; and Lynn C. Koss, B.A., Graduate Student, Division of Special Education and Rehabilitation, Syracuse University, 805 South Crouse Avenue, Syracuse, New York 13210.

Purpose: To explore the relationship between the development of object permanence, causality, symbolic play, and language production in young normal and developmentally delayed children.

Subjects: Four normally developing children, ages 10 to 21 months; and three developmentally delayed children, ages 18 to 32 months at the beginning of the study. All of the children attended a nursery program for typical and special children three mornings a week.

Methods: The children's development of object permanence and causality was measured by administering the appropriate Uzgiris-Hunt (1975) Scales once every 3 weeks. Information about the children's development of symbolic play was gathered by videotaping each child playing with a standard set of objects and toys every 3 weeks. Initial data collection lasted for a period of 6 months. The children's behaviors with these objects were analyzed using Lezine's (1973) and Sinclair de Zwart's (1971) descriptions of the behaviors which characterize the four stages of symbolic play. Data collection on language development involved keeping weekly logs of the utterances produced during the nursery sessions. In addition, the utterances produced during the videotaped sessions were transcribed and analyzed. All samples were analyzed for the frequency and persistence of use of the children's single words, for the referential function of the words, for the appearance and consistent use of two-word utterances, and for the semantic relations expressed in these utterances.

Findings: Preliminary analyses have revealed some of the following major developmental relationships: (1) When the children's production vocabularies consisted of fewer than 10 words which were used frequently and persistently, their behaviors with objects indicated that they were in Stage 1 of symbolic play. They played with most or all of the objects in a short period of time, and their primary behaviors were hitting, throwing, banging, and mouthing. On the object permanence tasks, they were able to find an object invisibly displaced once, but failed on three invisible displacements. In terms of operational causality, children at this level gave a mechanical object back to an adult to activate, but did not attempt to activate it themselves. (2) By the time the children were producing 10 or more single words frequently and persistently, they had moved into Stage 2 of symbolic play, playing with fewer objects and beginning to use some of the objects in more conventional ways. In terms of object permanence, they were able to find an object following three successive invisible displacements. In the early part of the single-word utterance stage, their performance on the causality scale was the same as before. Later in this stage, however, they would activate a mechanical object themselves after demonstration. (3) Children who progressed

to Brown's (1973) early Stage I of language development (1.1 to 1.5 morphemes MLU) had also progressed to Stage 3 symbolic play, using all objects in appropriate ways (e.g., using the hairbrush to brush hair only). Children at this level found an object following three invisible displacements by searching systematically from the last screen back to the first. On the causality task, they consistently activated the object themselves before demonstration. The relationship between the cognitive and language development of the delayed children appears to parallel that of the normal children.

Duration: January 1977-June 1978.

40-DB-2 COGNITIVE DEVELOPMENT OF CHILDREN IN THE VISUAL ARTS

Investigator(s): Michael J. Parsons, Ph.D., Professor, College of Education, University of Utah, Salt Lake City, Utah 84112.

Purpose: To establish stages of development in children's responses to works of visual art.

Subjects: 150 girls and boys in grades kindergarten through 12.

Methods: Piagetian interviews were conducted using reproductions of paintings. Transcripts of the interviews were extensively analyzed.

Findings: Results indicated identification and description of seven aspects of aesthetic response within each aspect of developmental stages.

Duration: September 1975-September 1977.

40-DB-3 COGNITIVE STYLES IN PRESCHOOL CHILDREN

Investigator(s): Kathryn N. Black, Ph.D., Associate Professor; and Ann Lincoln, M.S., Graduate Student, Psychological Sciences, Purdue University, West Lafayette, Indiana 47907.

Purpose: To investigate the interest consistency of response tempo and accuracy relationships across three cognitive tasks.

Subjects: 22 girls and 22 boys, ages 36 to 65 months.

Methods: Three different tests were individually administered in two separate sessions. The primary measure of response style was the Kansas Reflection-Impulsivity Scale for Preschoolers (KRISP). The Preschool Embedded Figures Test (PEFT) was also administered. Although accuracy scores on this test operationally define field independence-dependence, PEFT errors (maximum of two per item) and response latencies were also obtained to investigate the generalizability of reflection-impulsivity to this cognitive-perceptual task. The Peabody Picture Vocabulary Test (PPVT) was the third test in the battery. Response latencies were recorded to assess the across-situation consistency in response tempo. Verbal mental age and IQ scores were also derived from PPVT performance.

Findings: Significant negative correlations between KRISP total errors and mean response latencies were found. PEFT intratask correlations were considerably smaller, and generally nonsignificant. No significant relationship was found between PPVT errors and latencies. Relative consistency in KRISP and PEFT error scores was evidenced. Support for some degree of generalizability in response times was also demonstrated with the highest intertask latency relationship found for the KRISP-PPVT. Latency correlations were also significant. Finally, latency correlations across the PPVT and PEFT were significant, although of low magnitude. The greater similarity in response format between the KRISP and PPVT may partially account for the apparent greater magnitude of relationship in latencies on these two tasks. There is also a possibility of situational confound, since the KRISP and PPVT were consistently administered by one experimenter in a single session, and the PEFT was administered in a separate session by one of three other experimenters.

Duration: 1976-1977.

THE DEVELOPMENT OF TEMPORAL AND SPATIAL RELATIONAL UNDERSTANDINGS

Investigator(s): William J. Friedman, Ph.D., Assistant Professor, Department of Psychology, Oberlin College, Oberlin, Ohio 44074.

Purpose: To trace the development of certain temporal and spatial relational terms as they come to be used with reference to more than one reference object/event; and to compare these acquisitions with certain indices of cognitive development.

Subjects: 13 children, age 3; and 12 children, age 5, approximately half of each sex, drawn from two private nursery schools and a public day care center.

Methods: Subjects' comprehension of sets of temporal and spatial relational terms was tested with one or two reference events/objects. The design allowed contrast of relational and absolute understandings of terms, and comparison of this development with the ability to seriate and order events in time.

Findings: Certain spatial relational uses precede temporal relational uses. Cognitive measures share minimal specific common variance with linguistic measures, even though most show substantial increases between ages 3 and 5.

Duration: March 1977-completed.

Cooperating group(s): National Science Foundation Institutional Grant.

THE EFFECTS OF EXPERIMENTER-IMPOSED ORGANIZATION VS. SELF-GENERATED ORGANIZATION AND AGE ON SIMULTANEOUS MULTIPLE CODING IN FREE RECALL

Investigator(s): Sadie A. Grimmett, Ph.D., Associate Professor of Education, Institute for Child Study, Indiana University, 10th and By-pass 46, Bloomington, Indiana 47401; and Penny Githens, Graduate Student, Interdisciplinary Doctoral Program on Young Children, Smith Research Center, 2805 East 10th, Bloomington, Indiana 47401.

Purpose: To describe any multiple codes included in memorial representations of young children; to determine whether multiple coding is influenced by age; and to determine if the basis given for sorted pictures (i.e., organization) influences multiple coding in memory.

Subjects: 64 black children (32 girls and 32 boys): equal numbers selected from kindergarten, from grades 1 and 5, and from grade 6. The children attended three elementary schools located in the same general area of a small midwestern city. Parental permission was obtained for each child.

Methods: Twenty pictures of familiar things divisible into four categories by color, action, and taxonomy were used. An example of a categorical group is *people* with *blue* clothing *walking*. The younger children received 16 of 20 pictures in an effort to equate task difficulty. One-half of the children were shown the categories with one-third of these given one basis (color, action, or category) for the groupings. The other half formed their own groupings and bases for groupings. All children were given the three sets of retrieval cues following the sorting task. The order of these cues was counterbalanced across the children. The basic design applied to the data was a 2 (organization: imposed vs. generated) x 2 (sex: male vs. female) x 2 (age: younger vs. older) x 3 (retrieval cue: color vs. action vs. taxonomy) with the last factor a repeated measure.

Findings: Preliminary analyses revealed a significant main effect of retrieval cues but no effect for type of organization.

Duration: May 1977-December 1977.

Cooperating group(s): Spencer Foundation.

Publications: A report is available from: Institute for Child Study.

THE EFFECT OF MOTHER-CHILD COMMUNICATION ON COGNITIVE DEVELOPMENT OF THE CHILD

Investigator(s): Robert D. Hess, Ph.D., Lee L. Jacks Professor of Child Education, School of Education, Stanford University, Stanford, California 94305; and Hiroshi Azuma, Ph.D., Professor, Faculty of Education, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113, Japan.

Purpose: To compare in two cultures (the United States and Japan) the patterns of maternal communication and teaching styles that influence children's cognitive socialization.

Subjects: 67 American and 76 Japanese mother-child pairs from various socioeconomic strata.

Methods: Developmental measures were administered when the children were ages 3.75, 4, 5, and 6. Included were measures of the child's perceptual discrimination, communication skills, motor development, school readiness, recall, visual matching, language, and conservation abilities. Mothers and preschool teachers were interviewed when the child was age 3.75. Parental questionnaires were also administered when children were ages 5 and 6.

Findings: Major patterns in maternal communication and teaching styles are similar in the two cultures, though there are differences in the rank order of influential variables. In general, attitudes and strategies congruent with the habitual pattern of the particular culture seem to be more effective.

Duration: June 1972-September 1977.

Cooperating group(s): (1) Spencer Foundation. (2) Japanese Society for Promotion of Science.

Publications: Information is available from the investigators.

THE DEVELOPMENT OF INFORMATION ACQUISITION STRATEGIES

Investigator(s): Frederick J. Morrison, Ph.D., Visiting Associate Professor, Institute of Child Development, University of Minnesota, 51 East River Road, Minneapolis, Minnesota 55455.

Purpose: To investigate the extent and nature of initial alerting and encoding differences in early school age children.

Subjects: Children, ages 5 and 8; and adults from middle class families and schools.

Methods: Subjects received a tachistoscopic presentation of the following stimulus sequence: (1) a warning signal; (2) followed at varying intervals of one stimulus (geometric form); (3) followed, after a varying interstimulus interval, by a second form. Subjects were instructed to press a button upon deciding whether the two stimuli were the same or different.

Findings: Younger subjects take longer to optimally alert than do older subjects. Alertness fluctuates in relatively predictable cycles, different for each age group. Younger children appear to control their level of alertness less well than older children. Younger subjects show little difference in encoding single items but greater problems in retrieving items for later match.

Duration: June 1975-June 1978.

Cooperating group(s): National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

EARLY SYMBOLIZATION

Investigator(s): Dennie Wolf, Ph.D., Research Assistant; Howard Gardner, Ph.D., Research Associate; and Pat McKernon and Jennifer Shotwell, Researchers, Project Zero-Infant Symbolization, Graduate School of Education, 316 Longfellow Hall, Harvard University, 13 Appian Way, Cambridge, Massachusetts 02138.

Purpose: To investigate the developmental course of early symbolization skills in diverse media including language, symbolic play, two-dimensional activities (drawing and writing), three-dimensional activities (clay and blocks), music, number, and movement; and to study children's early encounters with and comprehension of televised material.

Subjects: Six girls and four boys from middle class families, who have been observed since age 2.
Methods: This study combines the methods of naturalistic observation, experiment, and interview. In weekly sessions, children are observed in their home environments as they play spontaneously. In addition, children are regularly tested to measure their current level of performance in the diverse media mentioned in the Purpose. Tests of performance in these media include items from standardized tests as well as in-house assessments. Children are tested quarterly for overall intellectual development using the Uzgiris-Hunt Scales, Bayley Scales of Infant Development, and McCarthy Scales of Children's Abilities. Parents are regularly interviewed concerning their children's progress.

Findings: Basic cognitive skills appear to underly broad symbolic competence. There appear to be individual differences in the manners in which children move toward symbolic competence.

Duration: 1973-1979.

Cooperating group(s): Spencer Foundation, Chicago.

Publications: Information is available from Harvard Project Zero.

40-DB-9

MULTISENSORY SERIATION

Investigator(s): Richard J. Hofmann, Ph.D., Professor, Department of Educational Psychology, Miami University, 118 McGuffey Hall, Oxford, Ohio 45056.

Purpose: To compare and contrast seriating behavior between normal and learning disabled children.

Subjects: Normal and learning disabled boys and girls, ages 7 to 11. Approximately 40 learning disabled children are involved.

Methods: Strategies within each sense modality (tactile, kinesthetic, auditory, and visual) are assessed in an attempt to differentiate learning disabled types. Four sets of seriation tasks have been developed — one within each sense modality. The initial sort involves eight objects followed by three insertion elements. The data will be analyzed regarding nonscaler response patterns from a scaling view and using ANOVA to compare performances. Sense modality will be treated as a single independent variable.

Findings: Pilot data on 100 normal and 25 learning disabled children suggest a quantitative difference but no significant qualitative difference between learning disabled and normal children. The pilot study did not employ auditory seriation and had an unsatisfactory tactile seriation task.

Duration: June 1976-June 1978.

Cooperating group(s): McGuffey Laboratory School.

40-DB-10

ASSESSING REPRESENTATIONAL SPACE IN YOUNG CHILDREN

Investigator(s): Richard J. Hofmann, Ph.D., Professor, Department of Educational Psychology, Miami University, 118 McGuffey Hall, Oxford, Ohio 45056.

Purpose: To develop instrumentation and scoring criteria to use to assess the developmental phenomenon of spatial representation.

Subjects: 100 boys and girls, ages 4, 5, and 6.

Methods: The children were tested individually and required to represent 22 figures. The figures were scored according to 140 criteria based on the work of Piaget and Inhelder. Data are being analyzed using multidimensional scaling procedures.

Duration: January 1975-Fall 1978.

Cooperating group(s): McGuffey Laboratory School.

40-DB-11 CONFIRMATION OF ORDER WITHIN MODE OF REPRESENTATIONAL SPACE

Investigator(s): Richard J. Hofmann, Ph.D., Professor, Department of Educational Psychology, Miami University, 118 McGuffey Hall, Oxford, Ohio 45056.

Purpose: To verify empirical order within mode of representation: reconstruction, recognition, and reproduction.

Subjects: Intellectually normal children, ages 5.5 to 6.75 (52 boys and 48 girls).

Methods: The children were asked to represent a circle and a square (Design A of the Bender Gestalt Test) in various positions using three modes of representation. ANOVA and scaling procedures were used.

Findings: The order of representation was confirmed: reconstruction > recognition > reproduction. Scalability was extremely high. ANOVA results: ($p < .01$).

Duration: June 1975-December 1977.

Cooperating group(s): McGuffey Laboratory School.

40-DB-12 CONSERVATION OF INTERIOR VOLUME: SOME RECONSIDERATIONS

Investigator(s): Richard J. Hofmann, Ph.D., Professor, Department of Educational Psychology, Miami University, 118 McGuffey Hall, Oxford, Ohio 45056.

Purpose: To study the notion of learning sets using multiple (nine) conservation of interior volume tasks.

Subjects: Pilot Study: 200 girls and boys, ages 7 to 13, were individually tested. Final Study (in progress): Anticipate using 120 girls and boys, ages 7 to 12.

Methods: Three sets of three tasks are employed. Each set varies: Set 1 is a transformation with an added block; Set 2 is a transformation with a subtracted block; and Set 3 is a traditional Piagetian transformation. A Latin square with repeated measures is the anticipated statistical treatment.

Findings: Pilot study data indicate that exceptionally young children *appear* to conserve but are really responding using a learning set. The investigator expects to find age related trends.

Duration: Spring 1974-January 1979.

Cooperating group(s): McGuffey Laboratory School.

40-DB-13 REPRESENTATION II: INTELLECTUAL REALISM

Investigator(s): Richard J. Hofmann, Ph.D., Professor, Department of Educational Psychology, Miami University, 118 McGuffey Hall, Oxford, Ohio 45056.

Purpose: To understand the distinction between recognition and reproduction as it relates to representation in 4-, 5-, and 6-year-old children.

Subjects: Normal girls and boys, ages 3 to 7.

Methods: Children are involved in recognition tasks of the human figure (primitive types) on charts. The children make human figure drawings and must represent by drawing a knitting needle thrust through an orange. Characteristics (Piagetian representation) are compared from one task to another. One-to-one testing and interactions are employed.

Findings: Recognition is remarkably advanced over reproduction. The role of intellectual realism is still not fully understood and requires much more testing.

Duration: September 1977-December 1978.

Cooperating group(s): McGuffey Laboratory School.

THE TADPOLE: DEVELOPMENTAL SUBSTAGES IN HUMAN FIGURE DRAWING

Investigator(s): Richard J. Hofmann, Ph.D., Professor, Department of Educational Psychology, Miami University, 118 McGuffey Hall, Oxford, Ohio 45056.

Purpose: To verify an hypothesized five-stage developmental sequence in representing human figures.

Subjects: Approximately 2,500 (cross-sectional) children, ages 4 to 6.5; and approximately 36 (3-year longitudinal) children, ages 4 to 7.

Methods: The stages were initially identified using cross-sectional data. Longitudinal data were needed to establish the validity of the stages. The longitudinal sample, although small, has provided one human figure drawing every month for 3 years. Scaling procedures were employed.

Findings: The substages have been clearly identified. There is strong evidence that they are developmental.

Duration: Spring 1975-August 1978.

Cooperating group(s): McGuffey Laboratory School.

PICTORIAL HUMOR AND INCONGRUITY IN YOUNG CHILDREN

Investigator(s): Richard J. Hofmann, Ph.D., Professor, Department of Educational Psychology, Miami University, 118 McGuffey Hall, Oxford, Ohio 45056; and Jed Docherty, Ph.D., Assistant Professor, School of Psychology, Rutgers University, New Brunswick, New Jersey 08903.

Purpose: To describe the role and function of incongruity in the humor of young children; and to establish a theoretical model that can generate humorous series of cartoons.

Subjects: Normal girls and boys, ages 3 to 7.

Methods: Both sexes are involved in the research because there is uncertainty as to what role sex will play. The researchers have started with 4-year olds and will work up and then down by age. Four sets of pictorial cartoons are employed. Each set has six variations on a theme. Children are questioned about what is and is not funny. They are asked to order pictures within the set according to how funny they are. Scaling procedures are being used initially.

Findings: It took a year to establish a theoretical model that allowed the researchers to successfully generate four sets of six cartoons.

Duration: January 1977-continuing.

Cooperating group(s): McGuffey Laboratory School.

HOW DO NORMAL AND RETARDED CHILDREN COME TO UNDERSTAND PIAGETIAN CONSERVATION?

Investigator(s): Dorothy Field, Ph.D., Research Fellow, Institute of Human Development, University of California, 1203 Tolman Hall, Berkeley, California 94720.

Purpose: To compare the responses of young normal children to training in Piagetian conservation with the learning exhibited by mildly retarded children of similar MA; and to determine whether children younger than CA 5 can be trained in conservation using the strict criteria of Piaget: permanence and generalization of acquisition.

Subjects: For this study, part of a continuing series, 85 nursery school girls and boys, ages 36 to 61 months, were tested. Sixty-three of the children were assigned to one of nine groups, balanced for MA, CA, sex, school, and pretest score. The subjects were representative of a wide range of socioeconomic status and race.

Methods: A 2 x 2 x 2 factorial design investigated the importance of identity (I), reversibility (R), and compensation (C) explanations given during verbal rule training. Groups comprised pure I, R, and C as well as all possible combinations (IR, IC, RC, IRC); a learning set group with no verbal rule; and a control group with other activities. Training consisted of three sessions of oddity

training of number and length concepts. Posttest required justification as well as judgment for mass, liquid, and weight as well as number and length. A delayed posttest was also given after 2½ to 5 months. Differences in understanding of relational terms (more, less, same) were also studied. **Findings:** Retarded and normal children performed very similarly in number of quantities conserved: the I effect was most important, closely followed by R; whereas, C training had little value. Similarities also were found in the kinds of justifications given for each concept. Where there were differences in outcome, retarded children tended to perform more competently. Most nursery school children acquired some understanding, but in most cases, only those children of MA $\geq$ 60 months acquired conservation when judged by the strict criteria. Differences were found in training groups in this subset of higher MA children as well.

Duration: August 1976-January 1978.

Cooperating group(s): University of California, Harold E. Jones Study Center.

Publications: Field, D. The importance of the verbal content in the training of Piagetian conservation skills. *Child Development*, December 1977. (This is the study of the mildly retarded children with whom the children in this study are being compared.)

40-DB-17 **DEVELOPMENTAL NORMS ON TWO INFORMATION PROCESSING TASKS**

Investigator(s): Morris E. Eson, Ph.D., Professor, Psychology Department, State University of New York, 1400 Washington Avenue, Albany, New York 12222.

Purpose: To establish norms on information processing tasks.

Subjects: 15 boys and 15 girls in grades 1, 3, 5, 7, 9, and 11; and 30 adults, ages 60+.

Methods: Performances on Trailmaking and Stroop Color-Word tasks were timed. Differences in scores for noninterference and interference were compared.

Findings: Handling of interference follows an expected developmental trend.

Duration: January 1977-completed.

Publications: Norms are available from the investigator.

40-DC-1 **MEMORY AND LEARNING PROCESSES IN SCHOOL AGE CHILDREN**

Investigator(s): David Waugh, M.A., Graduate Student; and Graham A. Nuthall, Ph.D., Professor, Education Department, University of Canterbury, Private Bag, Christchurch, New Zealand.

Purpose: To determine the role of mental imagery in associative learning as it relates to levels of intellectual ability and age.

Subjects: 32 girls and 16 boys, age 8; and 32 girls and 16 boys, age 10, selected from normal school classrooms.

Methods: Nouns selected from children's reading books were used in a sentence embedded paired associate learning task. Experimental subjects were given careful instructions in the use of imagery during learning trials. Data were analyzed in a 2 x 2 analysis of variance (age x treatment with ability level as covariate).

Findings: Imagery has a significant effect (contrary to Horowitz and Levin, 1972), but age effect disappears when ability level is used as a covariate.

Duration: May 1975-completed.

Publications: A report is available from Professor Nuthall.

40-DC-2 **MEMORY AND LEARNING PROCESSES IN SCHOOL AGE CHILDREN**

Investigator(s): Barry Brooker, B.A., Graduate Student; and Graham A. Nuthall, Ph.D., Professor, Education Department, University of Canterbury, Private Bag, Christchurch, New Zealand.

Purpose: To investigate children's knowledge of their own learning processes and the relationship of these processes to their ability to learn and recall textual materials in a school setting.

Subjects: Children, ages 11 to 13, drawn from intact school classes.

Methods: In Study I, 20 children, ages 11 to 12, were interviewed to determine the methods they used to learn from set texts. In Study II, children's reported learning and study methods were correlated with results of a recall test on set text materials. In Study III, 41 boys and 51 girls from four school classes were randomly assigned to four groups. An experimental comparison of text recall was made of groups instructed to use imagery, make a logical analysis, check word frequency, and simply learn for a test.

Duration: May 1975-continuing.

Publications: Brooker, B. Learning memory processes in the classroom. Master's Thesis, University of Canterbury, Education Department, 1977.

40-DD-1 DEVELOPMENT OF THE KID SCALE

Investigator(s): Lew S. Katoff, M.A., Doctoral Student; and Jeanette Reuter, Ph.D., Professor, Department of Psychology, Kent State University, Kent, Ohio 44242.

Purpose: To develop an empirically normed and validated infant screening measure that can be completed by the child's caretaker.

Subjects: 420 mothers of infants less than 13 months of age from all socioeconomic levels.

Methods: Sample mothers were administered a pilot questionnaire. The data from the pilot questionnaire, along with a review of 70 published and unpublished infant assessment tools, were used to determine the most age-discriminating items and to provide norms for each item.

Findings: A previous pilot questionnaire was administered to 100 mothers, and 20 percent of the item pool was eliminated on the basis of lack of behavioral specificity.

Duration: January 1976-January 1978.

Cooperating group(s): Bureau of Education for Handicapped; Office of Education; Education Division; U.S. Department of Health, Education, and Welfare.

40-DD-2 WECHSLER INTELLIGENCE SCALE FOR CHILDREN-R (WISC-R) STABILITY

Investigator(s): June M. Tuma, Ph.D., Chief Psychologist; and Alan S. Appelbaum, Ph.D., Staff Psychologist, Division of Child and Adolescent Psychiatry, Department of Psychiatry and Behavioral Sciences, University of Texas Medical Branch, Galveston, Texas 77550.

Purpose: To determine the stability of Wechsler Intelligence Scale for Children-R (WISC-R) intelligence quotients across time.

Subjects: 23 boys and 22 girls, ages 7 to 15. The sample consists of normal children divided into high and low ability levels.

Methods: All children were given the WISC-R twice within 2 weeks. Multivariate analysis with age, sex, and IQ was the statistical treatment used.

Findings: No differences were found between the first and second testings, indicating that WISC-R is not susceptible to practice effects.

Duration: September 1976-November 1977.

40-DD-3 COMPARATIVE STANFORD-BINET PERFORMANCE OF RETARDED AND NONRETARDED CHILDREN

Investigator(s): Liam K. Grimley, Ph.D., Chairperson, Department of Special Education, Indiana State University, Terre Haute, Indiana 47809; and Ralph L. Lewis, M.S., School Psychometrist, Elkhart Community Schools, Elkhart, Indiana 46514.

Purpose: To compare Stanford-Binet performance of retarded and nonretarded children using Guilford's Structure of Intellect Model.

Subjects: 30 retarded children (IQ, 35 to 60) and 30 nonretarded children (IQ, 90 and above) matched in pairs. The members of each pair are equated as closely as possible on the basis of mental age and sex. Mental age scores ranged from 4.5 to 7.5 years.

Methods: In addition to a routine item analysis for all Stanford-Binet test items, the Meeker designed Structure of Intellect Profiles was plotted for each Stanford-Binet protocol, with comparisons of the various aptitude factors and groups. Data were then subjected to statistical analysis.

Duration: August 1976-December 1977.

40-DD-4

ASSESSMENT OF PRESCHOOL CHILDREN IN DAY CARE AND HEAD START PROGRAMS

Investigator(s): Sylvia B. Kottler, M.S., Assistant Professor, Special Education Section, Department of Education, Purdue University, South Campus Courts - E, West Lafayette, Indiana 47907.

Purpose: To identify low functioning children.

Subjects: 110 boys and 90 girls, ages 3 to 5: 140 children enrolled in day care programs and 60 children in Head Start programs.

Methods: The Denver Developmental Screening Test was administered to all subjects. Subjects were observed in their educational/social environments before testing, and observations were made of particular types of behavior recorded (e.g., out-of-seat inattention behaviors, social interactions with peers or with staff, etc.). In addition, each child's ocular function was evaluated. All assessments were completed by students enrolled in an education class entitled "Assessment of Exceptional Children."

Findings: Head Start children as a group have more developmental delays than the day care population. Although Head Start children are somewhat older, the percentage of children exhibiting failures is close to 30 percent of the enrollment.

Duration: September 1977-June 1978.

40-DD-5

A PIAGETIAN BASIS FOR EVALUATING THE BENDER GESTALT PROTOCOLS OF YOUNG CHILDREN

Investigator(s): Richard J. Hofmann, Ph.D., Professor, Department of Educational Psychology, Miami University, 118 McGuffey Hall, Oxford, Ohio 45056.

Purpose: To present a Piagetian scoring system for the Bender Gestalt Test (BGT) as an alternative to the Koppitz system.

Subjects: 107 normal girls and boys, ages 6 to 9.

Methods: The research methodology included test-retest, group vs. individual administration, interrater reliability, scalability, etc. The general psychometric properties of the Koppitz system are compared to the Piagetian system.

Findings: Without refinement, the Piagetian system having two subscore categories (topological and euclidean scores) is virtually identical psychometrically to the Koppitz system. Efforts are being made to refine the Piagetian system.

Duration: March 1977-February 1978.

40-DD-6

A LONGITUDINAL STUDY OF THE BENDER GESTALT TEST (BGT)

Investigator(s): Richard J. Hofmann, Ph.D.; Lydia R. Hofmann, Ph.D.; and Raymond Carleton, Ph.D., Department of Educational Psychology, Miami University, 118 McGuffey Hall, Oxford, Ohio 45056.

Purpose: To compare and contrast several methods of administering the BGT (group vs. individual); several methods of scoring the BGT (Koppitz vs. Piaget); and several methods of grouping BGT responses (by design; by scoring category).

Subjects: Approximately 200 boys and girls, ages 6, 7, and 8 over a 6-year period.

Methods: The research employed a counterbalanced design for administration to get test-retest as well as multitrait, multimethod materials and standardized test criteria for 3rd, 4th, 5th, and 6th grades in reading, arithmetic, etc.

Findings: Group administered tests have significantly greater predictive validity than individually administered tests. There is no apparent difference in reliability as a function of test administration or scoring procedure.

Duration: July 1972-January 1979.

Cooperating group(s): Kramer Elementary School, Oxford, Ohio.

40-DD-7

FACTORIAL VALIDITY OF THE DEFINING ISSUES TEST

Investigator(s): Richard J. Hofmann, Ph.D., Professor; Douglas Miller, Ph.D., Associate Professor; and Howard Epstein, Ph.D., Assistant Professor, Department of Educational Psychology, Miami University, 118 McGuffey Hall, Oxford, Ohio 45056.

Purpose: To study the relationship between age and moral judgment as measured by the Defining Issues Test.

Subjects: Approximately 120 subjects in each age group: 14 to 17; 18 to 21; and 22 to 30. The population included both sexes and high school students, college students, and college graduates.

Methods: Rest's Defining Issues Test was modified for computer scoring. Factor analysis, factor scores, and discriminant analysis were employed.

Duration: Summer 1975-December 1977.

40-DD-8

ANALYSIS OF DEVELOPMENTAL LEARNING SKILLS

Investigator(s): John N. Dickerson, M.M., School Psychologist; and Jack J. Shively, M.S., School Psychologist, South Bend Community School Corporation, 635 South Main Street, South Bend, Indiana 46601.

Purpose: To help identify children with skill developmental lags at the beginning of the kindergarten level.

Subjects: 650 children, age 4; and 550 children, age 5.

Methods: Beginning kindergarten level was chosen to help eliminate the *failure syndrome* with the hope of promoting a pleasant school experience. The Analysis of Developmental Learning Skills (ADLS) is an instrument designed by the investigators to measure developmental growth levels in nine areas, and to aid the teacher in providing various levels of instruction in order to meet a child's needs early in the school experience. This instrument was developed as a result of 18 years of research. It was administered on a pre- and posttest schedule by classroom teachers, teacher aides, elementary counselors, resource teachers, or resource teachers' aides. Results were returned to a central office where comparisons were made, reports written, and comparative results made available to teachers. Statistical treatment was performed by the Yale University Computer Division.

Findings: The ADLS has been used to identify possible learning disabilities, and hearing and visually impaired language, conceptual, and social developmental lags.

Duration: 1959-continuing.

Cooperating group(s): Yale University, Computer Division.

40-DD-9

**TOWARD OBJECTIVITY IN DIAGNOSING LEARNING DISABILITIES:
REFINEMENT OF ESTABLISHED PROCEDURES**

Investigator(s): Marvin Goodman, Ph.D., Chief Psychologist; and Elias Mina, M.A., Psychoeducational Consultant, Board of Education for the Borough of North York, 64 Ameer Avenue, Toronto, Ontario, Canada M6A 2L3.

Purpose: To describe a comprehensive assessment procedure and diagnosis of learning disability, including a systematic, psychoeducationally oriented methodology.

Subjects: 540 children, ages 6.0 to 11.11, equally divided by sex and socioeconomic background. The children were of average intellectual functioning and were not experiencing academic or other difficulties in school.

Methods: Data were obtained on 21 widely used psychological tests or subtests. Comparisons were carried out with regard to sex, ages, and socioeconomic status differences. Factor analytical computations were employed in order to minimize data redundancies in the comprehensive assessment procedure.

Findings: In addition to the inappropriateness of using certain tests, three main factors emerged: reasoning, auditory sequencing, and sound blending. Up-to-date norms are available for 21 psychological tests or subtests.

Duration: 1970-completed.

Publications: A paper is available from the investigator. The cost per copy, including handling and postage, is \$5.00, payable to the Board of Education for the Borough of North York.

40-DD-10

VALIDITY OF THE MISSOURI CHILDREN'S BEHAVIOR CHECKLIST

Investigator(s): Nick A. DeFilippis, Ph.D., Assistant Professor, Department of Psychology, Augusta College, Augusta, Georgia 30904.

Purpose: To determine the clinical utility of a commonly used behavior checklist, The Missouri Children's Behavior Checklist (MCBC).

Subjects: 543 girls and boys, ages 5 to 16, selected from public schools of a midwestern community, from an institution for disturbed children, and from a psychology clinic.

Methods: Mothers of 302 normal children completed the MCBC, and these norms were reported for 7- and 9-year-old boys and girls. Counselors of the institutionalized children also completed the MCBC on 77 boys and girls. These MCBC scores were compared to the scores of the normal children. The mother-completed MCBC scores of 65 children seen in a psychology clinic were examined.

Findings: Socioeconomic status had no effect on MCBC scores. IQ demonstrated only a small effect on one of the six MCBC scales - sociability. Children institutionalized for aggression had higher aggression scores than normal children. Using a cut-off of one standard deviation above the mean for total deviant items scored provides a useful method for identifying children in need of psychological treatment.

Duration: September 1977-February 1978.

Cooperating group(s): (1) University of Iowa, Department of Psychology. (2) Annie Wittenmyer Home, Davenport, Iowa.

40-DD-11

DEVELOPMENT OF A PIAGETIAN ASSESSMENT DEVICE

Investigator(s): Barry Wadsworth, Ph.D., Associate Professor, Department of Psychology and Education, Mt. Holyoke College, South Hadley, Massachusetts 01075.

Purpose: To design a developmental assessment scale that can be used with children from the time they are age 4 through adulthood.

Subjects: To date, 30 girls and 30 boys, ages 6 to 16.

Methods: A set of 29 semistandardized tasks based on the work of Stephens has been developed. The tasks were designed to reflect the fixed sequence in which children acquire knowledge. Cognitive abilities assessed by the task items include: classification; symbolic imagery; concrete reasoning; conservation of length, substance, weight, and volume; spatial orientation; and formal reasoning. Reliability and validity analyses are being conducted for each item.

Duration: 1975-1978.

Cooperating group(s): (1) South Hadley Public Schools. (2) Gorge Child Study Center, South Hadley, Massachusetts.

Publications: Wadsworth, B. *Piaget for the classroom teacher*. New York: Longman, Inc., 1978.

40-DE-1

THE DEVELOPMENT OF THE CONCEPT OF TEMPERATURE IN CHILDREN

Investigator(s): Sidney Strauss, Ph.D., Senior Lecturer, School of Education, Tel-Aviv University, Tel-Aviv, Ramat Aviv, Israel.

Purpose: To determine the nature of the development of qualitative and quantitative reasoning about the following concepts as they pertain to temperature: direct function, inverse function, proportions, intensive physical quantity, and tepidness.

Subjects: 400 children: half advantaged, half disadvantaged; approximately equal numbers of boys and girls. Advantaged children were ages 3½ to 13½; disadvantaged children were ages 4½ to 14½.

Methods: Each child was tested individually and received seven classes of items. Intensity and tepidness questions were asked qualitatively and quantitatively; i.e., intensity involved mixing same temperature water (hot + hot; 70° C + 70° C); and tepidness involved mixing different temperature water (hot + cold; 70° C + 10° C). Direct function, inverse function, and proportions involved heating varying amounts of water. Children were asked to resolve conflicts between qualitative and quantitative reasoning about intensity that they themselves produced.

Findings: Qualitative intensity reasoning has a U-shaped development; i.e., young children solve the tasks, intermediate age children do not, while older children do again. This was found for advantaged but not disadvantaged children. Similar to the findings on intensity were the findings for the other concepts. Qualitative tepidness tasks were solved by 4-year olds. Quantitative problems were solved only from age 11. Conflict situations (e.g., a child argues that cold + cold = cold and 10° C + 10° C = 20° C) showed young children not recognizing conflict, intermediate age children changing qualitative reasoning, and older children changing quantitative reasoning.

Duration: April 1976-completed.

Cooperating group(s): Israeli Ministry of Education.

Publications: A research report will be available in manuscript form.

40-DF-1

EYE MOVEMENTS AND CHILDREN'S STRATEGIES: A LONGITUDINAL-DEVELOPMENTAL INVESTIGATION

Investigator(s): Marlene Scardamalia, Ph.D., Assistant Professor, Department of Psychology, York University, 4700 Keele Street, Downsview, Ontario, Canada M3J 1P3.

Purpose: To investigate, using eye movements as indices of cognitive processes, problem solving strategies in relation to the processing demands of tasks and the processing capacities of subjects.

Subjects: 15 children, five each from age levels 7 to 8, 9 to 10, and 11 to 12. Subjects were selected randomly from a pool of subjects at each age level who showed normal scores for their age on a pretest used to assess processing capacities.

Methods: It was hypothesized that younger subjects would use strategies as sophisticated as those of older subjects when tasks did not exceed their capacities. Subjects were tested individually in two sessions one year apart. Twenty-five matrix tasks were analyzed to determine their processing demands. Tasks ranged in difficulty from within the capacities of the youngest subjects to beyond

the capacities of the oldest subjects. Eye movements were measured by a Macworth Eye-Movement Camera and recorded on videotape. New procedures have been designed to transfer data from videotape to computer. Factors included in statistical analyses will be: age (three levels), session (two levels), strategy type (four levels), and item type (two levels – within and beyond capacity).

Findings: Data from videorecordings of eye movements suggest that the strategies of the younger subjects are comparable to those of older subjects on the lowest processing demand tasks. Computer based analyses are not yet available.

Duration: May 1975-Summer 1978.

Publications: Requests for data may be addressed to the investigator.

40-DF-2

THE EFFECT OF DIFFERENT TUTORIAL PRESENTATION METHODS ON THE MASTERY OF CLASSIFICATION TASKS

Investigator(s): Davida R. Schuman, Ph.D., Assistant Professor, Department of Communication Science, Kean College of New Jersey, Union, New Jersey 07083.

Purpose: To investigate the level of effectiveness of modeling and gesturing when varied with high verbal and low verbal communication in a tutorial situation.

Subjects: 210 girls and boys, ages 6 to 8, in grades 1, 2, and 3 of three schools in Newark, New Jersey and an inner city parochial school in Jersey City, New Jersey.

Methods: Six classification tasks were used in two test conditions, with and without subquestions. All subjects were pretested with a vocabulary screening test and a composite of six tests at different levels of classification tasks with and without subquestions. Those children successfully completing the designated baseline performance were assigned randomly to experimental subgroups and control groups. Children in the experimental subgroups were individually trained by their classroom teacher on 4 consecutive days for a period of 20 to 30 minutes each day. After the training was completed, the experimental subgroups were posttested using a parallel form of the six classification tasks administered in pretesting. After a 4-week interval, the pretest was administered as a test of retention of training. Subjects in the control groups were administered the pretest with or without subquestioning followed by regular classroom instruction with no other form of training. They were retested approximately 1 week later using a parallel form of the pretest. Four weeks later, the pretest was administered as a test of retention.

Findings: For the nonsubquestioning condition, chi-square analysis showed that there were no significant differences between the experimental subgroups and control group on any of the test trials (pretest, posttest, retention test) for any level of the classification tasks. However, comparisons in the frequency of success were made between the experimental subgroups and the control group across all test trials. It was found that horizontal reclassification obtained a significant chi-square. When pairwise z tests were performed with adjusted error levels, it was found that the control group had a significantly lower proportion of success than each of the experimental subgroups. For the subquestioning condition, the analysis of covariance showed that for dual-class membership, horizontal reclassification, and class-inclusion tasks, the control group had a significantly lower adjusted posttest mean than each of the four experimental subgroups. For class-intersection, the control group had a significantly lower adjusted posttest mean than high verbalization and modeling and low verbalization and modeling. For comparisons of adjusted retention test mean differences, it was found that the control group had a significantly lower adjusted mean than each of the four experimental subgroups on the class-inclusion task. The results were interpreted as demonstrating that directing the child's attention either through modeling or through gesturing to the important aspects of the task is an effective means for helping a child to master classification tasks. The child was given help in directing his focus upon the important elements of the classification task, so that he knew what to attend in order to initiate figurative processing before he began the operational thinking process. The results of the subquestioning condition were interpreted as indicating that less verbal children may be more likely to demonstrate a higher level of

operational performance where linguistic supports in the form of a systematic sequence of sub-questions are provided.

Duration: Spring 1975-completed.

40-DF-3

EFFECTS OF POSITIVE AND NEGATIVE INSTRUCTION ON CHILDREN'S BEHAVIOR

Investigator(s): Anthony B. Olejnik, Ph.D., Assistant Professor; and Mary Koch Janke, B.A., Department of Psychology, Northern Illinois University, DeKalb, Illinois 60115.

Purpose: To investigate how young children respond to various instructions (e.g., "Go fast" vs. "Don't go slow").

Subjects: Eight girls and eight boys, age 4, who attend a university sponsored preschool program.

Methods: This study is based on previous research which suggested that the kind of directions given to children will affect their behavior. A female experimenter gave each child four different instructions for three tasks. The tasks involved moving a toy car along a roadway, drawing a tail on a dinosaur, and coloring some stars. A stopwatch was used to measure the time the children moved the car under each of four directions: "Go slow," "Go fast," "Don't go slow," "Don't go fast." The children were also instructed to draw the dinosaur's tail either long or short, and to color the stars either inside or outside the lines. All instructions were presented in a random sequence.

Findings: A series of t-test comparisons performed on the data indicated no significant sex differences. However, there were significant differences in the children's behaviors under the different directions. As expected, children moved faster/slower and drew longer/shorter tails under positive instruction conditions.

Duration: September 1976-September 1978.

Publications: Information is available from Dr. Olejnik.

40-DF-4

INFORMATION PROCESSING CAPACITY AND THE DEVELOPMENT OF SPATIAL REASONING

Investigator(s): Marlene Scardamalia, Ph.D., Assistant Professor; and Mireille Champagne, Graduate Student, Department of Psychology, York University, 4700 Keele Street, Downsview, Ontario, Canada M3J 1P3.

Purpose: To investigate the types of spatial reorganizations imagined by children of different ages, with emphasis on how reorganizations are limited by information processing demands of tasks; and to attempt to provide a functional (as opposed to structural or Piagetian) analysis of spatial reasoning.

Subjects: 13 children at each of three age levels: 7 to 8, 9 to 10, and 11 to 12, who were pretested for field independence and processing capacity. Subjects were chosen randomly from a pool of subjects having pretest scores within one standard deviation of the mean for their age group.

Methods: Children were presented with spatial reasoning tests consisting of simple puzzles. Differently shaped pieces of cardboard were cut up, and the child's task was to judge whether or not the pieces could be reassembled to form a square. The number of transformations or rotations required to make accurate judgments was analyzed. Binomial probabilities were used to determine whether subjects passed or failed tasks as predicted by matches or mismatches in the subject's available capacity and numbers of rotations required. Puzzles are being refined and data are being collected from subjects covering a larger age range. The relationship between field independence and spatial reasoning is also being explored.

Findings: Approximately two-thirds of the puzzles showed age related drops in performance as predicted.

Duration: April 1976-Fall 1979.

Publications: Information is available from Dr. Scardamalia.

THE DEVELOPMENT OF STRUCTURE AND STRATEGY IN TWO-DIMENSIONAL REPRESENTATION

Investigator(s): Jessica Keown Beagles, M.A., Teaching Associate; and Patricia Marks Greenfield, Department of Psychology, University of California, 405 Hilgard Avenue, Los Angeles, California 90024.

Purpose: To systematically investigate hierarchical complexity and interruption in a new domain — two-dimensional representation.

Subjects: 60 girls and boys, ages 4 to 5½, who attend a church affiliated preschool.

Methods: The children were asked to build flower arrangements constituting tree-structures of different levels of hierarchical complexity. For each model, task difficulty was varied by requiring children to build either with whole flowers or with component pieces. The ability to reproduce the models formed a Guttman scale according to tree-structure complexity, and older children scored higher on the scale than younger children. Thus, hierarchical complexity has a developmental role in two-dimensional representation just as in language and three-dimensional construction. The construction process was analyzed in terms of uninterrupted and interrupted strategies.

Findings: Unlike earlier results with three-dimensional construction tasks, children did not avoid interrupted strategies. The lack of strategy preference with whole flowers and the development of a preference for interrupted strategies with components may stem from the fact that the strong figural and thematic aspects of the models reduced the cognitive complexity of an interrupted strategy.

Duration: Spring 1974-October 1977.

Publications: Information is available from the investigators.

DEVELOPMENT OF SENSITIVITY TO PICTORIAL DEPTH

Investigator(s): Albert Yonas, Ph.D., Associate Professor, Department of Child Psychology, Institute of Child Development, University of Minnesota, 51 East River Road, Minneapolis, Minnesota 55455.

Purpose: To investigate infants' development of sensitivity to static pictorial information for depth.

Subjects: 100 infants, ages 26 to 30 weeks; and 50 infants, ages 20 to 22 weeks, equally divided by sex.

Methods: The pictorial display used was a fronto-parallel trapezoidal window, which creates an illusion under monocular viewing of a rectangular window oriented at 45° to the viewer. A control display was used in the first experiment with the older infants to test for the possibility that reaching might be determined by the unequal size of the sides of the pictorial display; one side of this display was smaller than the other side, but there was no information that the sides were at different distances. Binocular and surface texture information was minimized by removing the internal spaces of the windows and by occluding one of the infant's eyes. The displays were divided into three regions for scoring: the large side, the middle area, and the small side. Reaching was scored from videotape recordings according to the location on the window that was first contacted by the infant. To assess directionality of reaching, the difference between the proportion of reaches contacting the large side and the proportion of reaches resulting in contact with the small side was determined for each infant. In a second experiment, fifty 26- to 30-week olds were assigned to either binocular or monocular viewing of the trapezoidal display. Binocular depth information was expected to override the pictorial depth information for infants as it does for adults. In a third experiment, 50 infants, ages 20 to 22 weeks, were tested to determine the onset of sensitivity to pictorial depth; half of the infants viewed the trapezoidal display, and half viewed the real rectangular window rotated 45° about the vertical axis. The displays were viewed monocularly. Methods of data analysis, presentation, and scoring for the second and third experiments were the same as in the first experiment.

Findings: Sensitivity to static pictorial information for depth develops between 22 and 26 weeks of age. When conflicting binocular and surface texture information was minimized, 26- to 30-week-old infants directed their reaching to the apparently closer side of a photograph of a window rotated in depth. Infants from 20 to 22 weeks of age were insensitive to the pictorial depth information in this display.

Duration: June 1976-June 1978.

Cooperating group(s): National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

40-DG-2

ENTRAINMENT VARIABLES OF A BIOLOGICAL CLOCK GOVERNING PERCEPTION IN CHILDREN

Investigator(s): J.W. Lovett Doust, M.D., F.R.C.P., Professor of Psychiatry and Head; and Ints Podnieks, M.A., Research Psychologist, Research Section on Psychophysiology, Clarke Institute of Psychiatry, 250 College Street, Toronto, Ontario, Canada M5T 1R8.

Purpose: To conduct a psychophysiological investigation of factors underlying the development of perception in humans.

Subjects: An initial sample of 11 healthy children, ages 12 to 18, both sexes. The sample will be increased as the study proceeds.

Methods: The experimental design incorporates an equal interval time series of repeated test stimuli, the responses to which are analyzed by a method of computerized autocorrelation to demonstrate a recurrent periodicity (should it be present). Testing duration for each set of stimuli is 30 minutes or longer. The repeated stimuli cover different modalities of perception, and the variables include a variety of zeitgebers.

Findings: A biological clock specific for perception has been found in persons of all ages and for reaction time, CFF, and psychomotor performance. The results suggest coupled clocks of ultradian frequency for all these types of perception. The phase and frequency of the clocks are subject to change by pathology of the CNS, vigilance, certain psychiatric variables, and drugs.

Duration: 1975-1980.

Publications: (1) Lovett Doust, J.W.; Payne, W.D.; and Podnieks, I. An ultradian rhythm of reaction time measurements in man. *Neuropsychobiology*, 1977. (2) Lovett Doust, J.W. and Podnieks, I. Properties of an ultradian biological clock regulating sensory perception in man: A longitudinal study. *Physiological Psychology*, 1976, 4, 523-528. (3) Podnieks, I. and Lovett Doust, J.W. Characteristics of a neural clock regulating perception and psychomotor performance in man. *Biological Psychology*, 1976, 4, 265-276. (4) Lovett Doust, J.W. and Podnieks, I. Two biological rhythms of perception distinguishing between intact and relatively damaged brain function in man. *International Journal of Chronobiology*, 1976, 4, 39-49. (5) Podnieks, I. and Lovett Doust, J.W. Spontaneous rhythms of perceptual motor performance in intact and damaged brain of man. *Biological Psychology*, 1975, 3, 201-212. (6) Podnieks, I. and Lovett Doust, J.W. Emergence of a biological rhythm when certain psychological tests are repeated at regular intervals in mentally retarded children. *Journal of Interdisciplinary Cycle Research*, 1975, 6, 213-222. (7) Lovett Doust, J.W. and Podnieks, I. Comparison between some biological clocks regulating sensory and psychomotor aspects of perception in man. *Neuropsychobiology*, 1975, 1, 261-266.

40-DG-3

A PIAGETIAN BASED ASSESSMENT PROCEDURE FOR IDENTIFYING CHILDREN WITH VISUAL LEARNING DISORDERS

Investigator(s): Richard J. Hofmann, Ph.D., Professor, Department of Educational Psychology, Miami University, 118 McGuffey Hall, Oxford, Ohio 45056.

Purpose: To develop an instrument to assess a child's ability to function within regions of the domain of representational space; and to determine if the instrument as developed can discriminate among children with and without visual learning disorders.

Subjects: 20 visual learning disordered children: average age, 8.2; 20 nonvisual learning disordered children: average age, 8.2; and 40 normal children: average age, 8.3.

Methods: Six figures were copied and scored regarding topological and euclidean properties as discussed by Piaget and Inhelder and Hofmann and Scroggins. Forty-four properties were scored and the results were analyzed using ANOVA, Scheffe, and discriminant function analyses.

Findings: The instrument discriminated ($p < .01$) visual learning disordered children from other children. Discrimination occurred on the basis of one topological property (closure) and one euclidean property (angulation).

Duration: January 1976-January 1978.

Cooperating group(s): McGuffey Laboratory School.

40-DG-4

EYE AND HAND DOMINANCE IN KINDERGARTEN AND FIRST GRADE CHILDREN

Investigator(s): Sarah Van Camp, Ed.D., Associate Professor of Child Development, College of Home Economics, University of Delaware, Newark, Delaware 19711; and Matilda B. Bixley, M.S., Kindergarten Teacher, Tatnall School, Wilmington, Delaware.

Purpose: To determine any relationship between eye and hand dominance and age, grade, race, sex, or socioeconomic status.

Subjects: 159 boys and 152 girls in kindergarten and first grade: 196 White, 111 Black, and 4 Puerto Rican, from lower to middle class socioeconomic backgrounds.

Methods: Children were tested individually on three different eye and two hand measures. Eye Measure I was focusing on an object through a box; Eye Measure II was telescope sighting; and in Eye Measure III, the child focused on the examiner's forehead through a box. Hand Measure I was hand use with a telescope; Hand Measure II was drawing a picture. There was no control group. Pearsonian correlations and chi-square analysis were used to analyze data.

Findings: Forty-four percent of the total population showed mixed laterality, primarily right hand-left eye. Forty-six percent of the males and 42 percent of the females; 42 percent of the blacks and 45 percent of the whites showed the same. No statistically significant relationship was found for the variables of age, grade, race, sex, or socioeconomic level.

Duration: 1975-completed.

Publications: An article appeared in the *Merrill-Palmer Quarterly*, 1977, 23(2), 129-139.

40-DG-5

DEVELOPMENT OF PERCEPTION OF INVARIANTS OF OBJECTS AND EVENTS

Investigator(s): Eleanor J. Gibson, Ph.D., Susan Linn Sage Professor of Psychology, Department of Psychology, Cornell University, Uris Hall, Ithaca, New York 14853.

Purpose: To investigate how infants extract information about constant, invariant properties of objects from events involving motion.

Subjects: Infants, ages 3 to 5 months.

Methods: Three studies have been completed to date. The studies used an habituation-dishabituation procedure, carrying habituation to a criterion. Fixation time (looking) was measured. In Experiment I, subjects habituated to three different motions (all perspective transformations). Dishabituation was tested to a fourth perspective transformation and a deformation. Experiments II and III replicated and tested discrimination of shapes always presented in motion.

Findings: Infants perceive some invariant information in perspective transformations and differentiate from a deformation. At 3 months, shapes are differentiated despite presentation with varying motions.

Duration: October 1975-January 1978.

Cooperating group(s): National Science Foundation.

Publications: Papers were presented at the Society for Research in Child Development Meeting, March 1977 and at the Eastern Psychological Association Meeting, April 1977.

40-DG-6**PERCEPTUAL DEVELOPMENT OF BLACK AND WHITE CHILDREN AND THE ACQUISITION OF LITERACY SKILLS**

Investigator(s): Gloria J. Powell, M.D., Assistant Professor IV and Director; and Rosslyn Gaines, Ph.D., Associate Professor III, Child Outpatient Department, Neuropsychiatric Institute, University of California, 760 Westwood Plaza, Los Angeles, California 90024.

Purpose: To determine whether there are or are not universal norms in the developmental process of perception.

Subjects: 50 children from Eastern Nigeria; and 80 black and 80 white children from Los Angeles, California. Half of the children are age 4; half, age 8.

Methods: To examine perceptual development, six areas of perception were assessed: (1) visual function, using the Snellen "E" Test, Funduscopy and Lens Examination; (2) auditory function (Wepman Auditory Test, Otoscopic Examination); (3) visual discrimination (Oddity Test, Letter Discrimination, Seriation Test, Color Oddity Test, and Mueller-Lyer Test); (4) auditory discrimination (Tonal Articulation Test, Digit Test of the Wechsler Intelligence Scale for Children, Auditory Sentence Recall, and Auditory Comprehension Test); (5) perceptual-cognitive function (Embedded Figures Test, Color Form-Size Test, Memory Design, Categorization Test, and Mueller-Lyer Test); (6) auditory-visual integration (Birch and Belmont Auditory-Visual Integration Test and Auditory-Picture Vocabulary Test).

Findings: An earlier study (Gaines, 1966) found that African children chose color to form into adolescence. This perceptual preference is in contrast to white European and American children, who select form from kindergarten into adolescence and adulthood. In the present study, among the color-size choices, all of the 8-year olds selected color. Among the 4-year olds, however, half selected size and the other half selected color. Most 8-year-old and 4-year-old children do not select size in a color-size choice. This finding supports the thesis postulated by Suchman that there may not be universal norms in the developmental process of perception.

Duration: September 1976-continuing.

Cooperating group(s): Neuropsychiatric Institute Biomedical Research Support Grant.

40-DH-1**THE EFFECT OF AGE AND THE PRESENCE/ABSENCE OF OBJECTS ON CHILDREN'S LANGUAGE USAGE**

Investigator(s): Janet Riehecky, M.A., Graduate Student; and Catherine Kinsky, Ph.D., Assistant Professor, Department of Information Sciences, Illinois State University, Normal, Illinois 61761.

Purpose: To investigate the effect of two situational factors, listener's age and the presence/absence of concrete objects on children's language usage; specifically, mean length of response (MLR), type-token ratio (TTR), and speaking rate.

Subjects: 32 boys: 16 in second grade, ages 7.3 to 8.7, and 16 in sixth grade, ages 11.5 to 13.1.

Methods: Each subject was placed in three interaction settings: with an adult, with a peer, and with a kindergarten child. In each setting, half of the subjects had objects present to focus the discussion; the other half did not. Subjects were instructed to tell stories. A spontaneous language sample was recorded, which was analyzed for adaptations in MLR, TTR, and speaking rate. A factorial analysis of variance was done on the assembled data to determine significance.

Duration: February 1977-completed.

Publications: A paper presented to the Speech and Language Sciences Division of the Speech Communication Association Conference, Washington, D.C., December 1977.

40-DH-2**DEVELOPMENT OF NATURAL LANGUAGE CONCEPTS**

Investigator(s): Edith D. Neimark, Ph.D., Professor, Department of Psychology, Douglass College, Rutgers University, New Brunswick, New Jersey 08903.

Purpose: To obtain evidence on classification behavior for complex natural language categories such as *food, furniture, and animal*.

Subjects: Children in grades 6 through 8 and college students.

Methods: Subjects were instructed to sort cards into classes belonging together (extension) and then to describe the rules for class inclusion (intension). There were many cards with a wide range of material in the general categories of animal, food, and furniture. Data were analyzed into taxonomic hierarchies by the Carroll Method.

Findings: There do not appear to be many differences between children and college students with respect to hierarchy structure, but evidence does suggest dangers of generalization; i.e., there are differences among classes: food is the most consistently orderly; furniture, the least orderly.

Duration: September 1976-January 1978.

Cooperating group(s): National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: A chapter in H. Reese and L. Lipsitt (Eds.), *Advances in child behavior and development*, Vol. VI. New York: Academic Press, 1971.

40-DH-3

FAMILY COMMUNICATION PATTERNS, COGNITIVE COMPONENTS, AND SOCIAL FACTORS RELATED TO DEVELOPMENTAL LANGUAGE DELAY

Investigator(s): H.I.J. van der Spuy, Ph.D., Director; Heather Elbard, Speech Therapist; and Carol Walker, Psychometrist, Department of Psychology, Chedoke Hospitals, Evel Pavilion, Box 590, Sanatorium Road, Hamilton, Ontario, Canada; and Linda Siegel, Ph.D., Department of Psychiatry, McMaster University, Hamilton, Ontario, Canada; and Anne Berens, Ph.D., Consultant, Ministry of Health, Toronto, Ontario, Canada.

Purpose: To investigate some of the cognitive, social, and emotional correlates of idiopathic delayed language development in preschool children; and to evaluate the efficacy of a treatment program for them.

Subjects: 40 idiopathic language delayed subjects, ages 3 to 6; a group of children with normal language development; and a group of children with normal language development but with behavioral disturbances. Groups were matched for age, gender, socioeconomic status, and mental age.

Methods: Idiopathic language delayed subjects are being compared with the other groups of children. It is hypothesized that (1) children with idiopathic language delay come from families with significantly more disturbed family relations than children with normal development; (2) a specifically designed treatment program will effectively improve the language skills of these children; (3) improvement in language skills will be associated with an improvement in family relations; (4) language delayed children will show deviant behavioral patterns and/or delayed patterns of peer interaction, which will improve with improved language skills; and (5) language delay is not primarily a cognitive defect. One-half (20) of the language delayed children were enrolled in the preschool language treatment directly after identification. Treatment for the other half was deferred for 6 months to evaluate the efficacy of the program. Appropriate evaluations and statistical analyses are being carried out.

Duration: 1977-1979.

Cooperating group(s): Ontario Mental Health Foundation, Toronto.

40-DH-4

LONGITUDINAL STUDY OF CHILDREN'S WRITTEN LANGUAGE

Investigator(s): Robert Gundlach, Ph.D., School of Education; Rae A. Moses, Ph.D., Department of Linguistics; and Bonnie Litowitz, Ph.D., School of Speech, Northwestern University, Evanston, Illinois 60201.

Purpose: To analyze longitudinally children's written language for linguistic and literacy development.

Subjects: 36 to 40 upper middle class children, ages 5 to 10.

Methods: Weekly samples of writing are obtained. Dictated stories and drawings are also being collected. These data are being used to assess the development of syntax, discourse, cohesiveness, and spelling of nontraditionally spelled words. Oral language and development of drawings are examined in relation to developing writing skills.

Duration: 1975-1980.

Cooperating group(s): Greeley School, Winnetka, Illinois.

Publications: Information is available from the investigators.

40-DH-5

COGNITIVE BASES OF COMMUNICATIVE DEVELOPMENT IN INFANCY

Investigator(s): Elizabeth Bates, Ph.D., Assistant Professor; and Inge Bretherton, Ph.D., Research Associate, Department of Psychology, University of Colorado, Boulder, Colorado 80309; Luigia Canaioni, Assistant Professor, University of Trieste, Trieste, Italy; and Virginia Volterra and Laura Benigni, Researchers, National Council of Research, Rome, Italy.

Purpose: To examine the relationship between language development and aspects of nonlinguistic development in both normal and language delayed children; and to determine what factors may be prerequisite to language.

Subjects: Normal and language deficient infants, ages 9 to 24 months.

Methods: This research incorporates a number of studies. Studies use cognitive testing, videotaping and natural observation, elicited communicative and play sequences, maternal interviews, and language testing. Most studies use a correlational approach, although there are some in which materials (e.g., causality toys) are treated as an independent variable.

Findings: Factors implicated in both preverbal gestural and verbal development from 9 to 13 months are tool use, imitation, and complex play (either manipulative or primitive symbolic play). Object permanence and spatial relations do not predict language development.

Duration: 1972-continuing.

Cooperating group(s): National Science Foundation.

Publications: (1) Bates, E. *et al.* From gesture to the first word. In M. Lewis and L. Rosenblum (Eds.), *Interaction, conversation and the development of language*. Wiley, 1977. (2) Bates, E. *Language and context*. Academic Press, 1976. (3) Other manuscripts are available from the investigators.

40-DH-6

PRAGMATIC ASPECTS OF SYNTACTIC DEVELOPMENT IN CHILDREN

Investigator(s): Elizabeth Bates, Ph.D., Assistant Professor, Department of Psychology, University of Colorado, Boulder, Colorado 80309; and Brian MacWhinney, Ph.D., Assistant Professor, School of Arts and Sciences, University of Denver, 2115 South University Boulevard, Denver, Colorado 80210.

Purpose: To determine the influence of contextual factors and given vs. new information in syntax acquisition.

Subjects: Normal English, Italian, and Hungarian children, ages 2 to 6. Sample size varies with study (a recent study had 120 children).

Methods: Subjects are given picture and event description tasks in which the newness or informational back- and foregrounding of information is systematically varied. Dependent variables are the various syntactic devices in the children's descriptions.

Findings: Children in varying linguistic communities begin with the same pragmatic devices, specializing after 3 years of age.

Duration: 1972-continuing.

Publications: (1) MacWhinney, B. and Bates, E. Cross-cultural factors in child discourse. (2) Other manuscripts are available from the investigators.

CHILD LANGUAGE AS A FUNCTION OF DAY CARE SETTINGS

Investigator(s): Alice S. Honig, Ph.D., Associate Professor, College for Human Development, Syracuse University, 100 Walnut Place, Syracuse, New York 13210.

Purpose: To evaluate the efficacy of different settings for language transactions among toddlers.

Subjects: Girls and boys, ages 24 to 30 months, in day care settings, from low income or high education families.

Methods: Four-minute behavioral episodes are recorded completely including all language comprehension and communication, whether gesturally or verbally produced. Each 4-minute sample is repeated four times in each of five settings typical of day care activities. Settings are: feeding time, creative activity, story or music time, gross muscle activity, and fine motor activity. No more than two samples per activity are taken on any one day. APPROACH codes (Caldwell and Honig) are being applied to the data.

Findings: Clinical observations to date suggest that day care settings for low income children rarely provide certain activities such as creative expression; therefore, data collection is fairly difficult to complete.

Duration: September 1976-continuing.

THE ACQUISITION OF PERSONAL REFERENCE IN THE LANGUAGE OF 2-YEAR OLDS: A LONGITUDINAL STUDY IN THE CONTEXT OF PARENT-CHILD INTERACTIONS

Investigator(s): Janet Strayer, Ph.D., Assistant Professor, Department of Psychology, Simon Fraser University, Burnaby 2, British Columbia, Canada.

Purpose: To examine children's comprehension and production of the personal pronouns "I" and "you."

Subjects: Four firstborn girls, ages 22 to 32 months, and their parents.

Methods: Seminatualistic videorecords were obtained every 2 weeks over a 10-month period beginning when the children were 22 months old. Children's comprehension and both children's and parents' production of nominal and pronominal personal references were analyzed in terms of age and mean length of utterance. Group trends and relations among language measures were assessed by correlational analyses. Possible teaching-learning strategies were investigated by sequential analyses of parent-child interactions.

Findings: In contrast to imitation predictions, children did not first produce those terms they most often heard. Parents, however, produced many more You-utterances than I-utterances. Children produced I-utterances before and at consistently higher frequencies than You-utterances. Children also produced few reversals of pronouns. The relative use of pronouns vs. corresponding proper names increased significantly with age, indicating a shift in the replacement of absolute labels with relative ones. Pronouns, in contrast to nominals, never occurred as single-word utterances, a finding bearing on the semantic function vs. the lexical properties of these terms. In general, the highest proportion of personal pronoun utterances occurred in semantic categories expressing Agent-Action, Experiencer, and Possessive relations. Incidental teaching-learning strategies were examined, and results showed that the communication function and supporting non-linguistic events for personal reference utterances were significantly different than nonpersonal utterances. Parents' I-utterances tended to describe ongoing activities and You-utterances required a verbal response. Reciprocal substitution of "I" for "you" and "you" for "I" was a recurrent pattern in establishing and maintaining common referents. The present findings provided an empirical test of current linguistic models. Data led to the proposal of a model of personal reference acquisition based on the interaction of semantic features and communication variables with perspective-taking skills suggested as a cognitive mediator.

Duration: Completed.

Cooperating group(s): Canada Council.

Publications: A paper presented at the Canadian Psychological Association meeting, Vancouver, B.C., Canada, June 1977: Strayer, J. How YOU gets where I was: The development of personal reference in the language of young children.

40-DH-9 LINGUISTIC PREREQUISITES OF FLUENT READING

Investigator(s): Ruth Pike, Ph.D., Assistant Professor, Faculty of Education, Institute of Child Study, University of Toronto, 45 Walmer Road, Toronto, Ontario, Canada M5P 1W5.

Purpose: To identify the linguistic skills that underly some of the components of reading fluency typically acquired in the later elementary school years.

Subjects: 32 girls and 33 boys, mean age 11.4, enrolled in normal fifth and sixth grade classrooms in working class, urban public schools; and 40 children, ages 11 to 12, attending fifth and sixth grade classrooms in a middle class university laboratory school.

Methods: The relationship between reading and oral language ability was tested using a correlational design. Reading ability was tested using the Gates-MacGinitie Reading Tests; oral language was tested by verbal recall of materials containing varying degrees of linguistic structure. In the pilot project, the relationship between reading and oral ability will be assessed using a longitudinal correlational design. Reading ability will be tested using the Metropolitan Achievement Test beginning in grade 1 and repeated annually. Oral language will be tested with word associations using Entwistle's list.

Findings: All children were able to use linguistic structures to help them on the recall task. The extent to which they used structure varied and was related to reading ability. The relationship between the particular oral language skills and reading competence depends on the exact priorities of the reading task tapped by the different measures of reading skill. Syntactic competence was related to the literal interpretation of text. Semantic competence was related to a more general inferential interpretation of text. There were also differences in serial position effect. For the best comprehenders, only the random lists showed the classic serial position pattern with recency and primacy effects. For the poorest comprehenders, the syntactically structured but semantically anomalous lists also showed this pattern, and there was less evidence of utilization of syntactic divisions in the formation of recall units even in the meaningful strings.

Duration: March 1976-continuing.

Publications: (1) A paper presented at the Annual Meeting of the American Educational Research Association, New York, 1977: Linguistic structure, memory and reading. (2) A paper presented at the Biennial Meeting of the Society for Research in Child Development, New Orleans, 1977: Memory for words and reading ability. (3) A paper presented at the First Annual Boston University Conference on Language Development: Linguistic development as a limiting factor in learning to read.

Personality

40-EA-1 PERSONALITY PREDICTION BY PEDIATRICIANS

Investigator(s): Percy H. Jennings, M.D., Pediatrician, Berkeley Pediatric Group, 1650 Walnut Street, Berkeley, California 94709.

Purpose: To correlate data from pediatricians' record notations (of children from birth to age 3) with descriptions of children who are now 5 to 10 years old.

Subjects: 45 children, ages 5 to 10, approximately equally divided by sex, who have been known by the pediatricians since birth.

Methods: From the time the children were born until they were age 3, the pediatricians recorded data related to eating; sleeping; reactions to stress, to the doctor, and to other people, etc. These data were compared to descriptions of the same children, now ages 5 to 10, provided by parents, siblings, and teachers.

Duration: 1976-1978.

40-EB-1

THE EXISTENTIAL TASKS OF CHILDHOOD

Investigator(s): Margaret M. Rappaport, Ph.D., Assistant Professor; and Herbert Rappaport, Ph.D., Associate Professor, Department of Psychology, Temple University, Weiss Hall, Philadelphia, Pennsylvania 19122.

Purpose: To investigate existential development longitudinally from infancy through adolescence with emphasis on personality constructs such as the development of versatility in living, orientation in time and space, development of values, and self-esteem.

Subjects: 50 boys and girls, ranging in age from neonates to adolescents, drawn from sample families, a nursery school, and a public school.

Methods: The initial phase of the study involved the utilization of semistructured interviews at home and at school. Part of the focus of the study is to develop projective instruments for phenomenological assessment of children.

Findings: Children appear to grasp and use the intangibles of their experience (e.g., responsibility, authenticity, and courage) well before they can articulate these as abstract experiences. It has been found that existential focus on consciousness, and the part played by awareness in the decisions and behavior of people, is also appropriate to children. They report an active participation in their own experience through choice making and evaluation leading to versatility and values formation. Children report, and demonstrate in various ways, the conscious dimensions of self-creation in their unique life time and space.

Duration: September 1974-September 1979.

Publications: Information is available from the investigators.

40-EB-2

EFFECT ON SELF-ESTEEM OF NON-PROMOTED PUPILS IN THE PRIMARY GRADES

Investigator(s): Phyllis L. Shuck, M.Ed., Teacher, Novato Unified School District, 1015 - 7th Street, Novato, California 94947.

Purpose: To investigate the effect of retention in school on the self-esteem of pupils in primary grades.

Subjects: 29 boys and 20 girls in the primary grades. The population is predominantly white and ranges from low to high socioeconomic status. At the time of the study, 35 nonpromoted and 14 promoted children (those who were considered for retention only) were identified. Three groups, drawn randomly, were formed consisting of 15 nonpromoted, 14 promoted, and 20 control children.

Methods: The hypothesis investigated stated that nonpromotion lowers self-esteem. The Self-Appraisal Inventory, published by Instructional Objectives Exchange, was administered to all groups in the third month of the school year. It consisted of 20 self-esteem questions, 12 of which pertained to school and 8 of which were general. The mean scores for each group were computed.

Findings: There were no significant differences in self-esteem unique to any group. A one-tailed t-test was used, and the hypothesis tested for significant differences at the .05 level. None of the interactions reached significance.

Duration: October 1977-December 1977.

Cooperating group(s): Hamilton Elementary School.

Publications: Information is available from the investigator.

AGE, SEX, AND SOCIAL CLASS DIFFERENCES IN THE DEVELOPMENT OF MORAL JUDGMENT OF INDIAN CHILDREN

Investigator(s): T.S. Saraswathi, Ph.D., Reader; Jayanthi Sundaresan, M.Sc., ICSSR Fellow, Department of Child Development, Maharaja Sayajirao University, Baroda, Gujarat, India 390002; and Kunjan Saxena, M.Sc., Lecturer in Child Development, C.D. Udaipur University, Rajasthan, India.

Purpose: To study age changes in children's moral reasoning; to obtain cross-cultural evidence regarding the invariance of the sequence of stage-wise progression in moral judgment; to test for social class and sex differences in moral judgment; to identify some of the specific family background factors related to development of moral judgment; and to obtain evidence regarding the generality-specificity dimension of moral judgment.

Subjects: 180 girls and 180 boys, equal numbers from the upper and lower social classes: 120 from each age group: 10 to 11, 12 to 13, and 14 to 15. The upper socioeconomic group consisted essentially of children whose fathers had college degrees, a professional or semiprofessional job, and earned over Rs. 1,000 per month. The lower social class sample consisted essentially of children whose fathers had no college degree, were employed in skilled or unskilled jobs, and had a monthly income under Rs. 1,000.

Methods: The clinical interviewing technique was used for data collection. Investigators employed the adapted version of Kohlberg's Moral Judgment Test, Form A, which consists of presenting three stories, each posing a moral dilemma, followed by a series of questions probing the child's moral reasoning. The stories dealt with five moral issues: life, punishment, father-son relationship, promise-contract, and property-trust. The stories were narrated one at a time and were followed by a series of questions related to the moral issues involved. The children's answers were probed further to obtain a clear picture of their reasoning. Each child was interviewed separately in the school he or she attended. The interviews were tape recorded and later transcribed. Scoring was done by two research associates with the help of the Kohlberg Scoring Manual (interscorer reliability, .88). The statistical analyses included (1) analysis of variance of moral maturity scores and issue scores; (2) repeated measures analysis of variance with issues as within-subject variable; and age, sex, and social class as between-subjects variables; (3) intercorrelations among issue scores and factor analysis of the intercorrelations; and (4) descriptive analysis of family background variables in relation to moral maturity and issue scores.

Findings: There is clear evidence of a shift from Stage 2 to Stage 3 during ages 10 to 15. The sequence of stage-wise progression is consistently present. Social class differences are markedly in favor of the upper social class. There are no sex differences. The specific family background characteristics that show a positive relationship with level of moral judgment are: nuclear rather than the joint family; small family size; and higher education, occupation, and income levels for both father and mother. There is substantial evidence for generality of moral judgment; evidence regarding specificity is also present to a lesser extent.

Duration: September 1975-completed.

Cooperating group(s): Indian Council for Social Science Research.

DEVELOPMENTAL STUDY OF IMPULSIVENESS AND ANXIETY

Investigator(s): Ernest S. Barratt, Ph.D., Professor; James White, M.D., Associate Professor; and Perrie Adams, Ph.D., Associate Professor, Department of Neurology and Neuropsychiatry, Medical Branch, University of Texas, Galveston, Texas 77551.

Purpose: To study the etiology of impulsiveness and anxiety and the developmental interrelationship of these two predispositions.

Subjects: Children and adolescents, ages 6 to 16, including patients, normal controls, and juvenile delinquents.

Methods: This study consisted of a multivariate experimental design involving traditional psychometric, neuropsychology, and psychophysiological measures.

Duration: 1975-continuing.

Cooperating group(s): Galveston County Juvenile Probation Department.

Social

40-FA-1

AN OBSERVATIONAL STUDY OF MOTHER-FATHER-INFANT INTERACTION AND ITS RELATION TO INFANT EXPLORATORY COMPETENCE

Investigator(s): Jay Belsky, M.S., Graduate Student, Department of Human Development and Family Studies, Cornell University, Ithaca, New York 14853.

Purpose: To discern similarities and differences in mother-infant and father-infant interaction; and to discern the relationship between parental behavior and infant exploratory competence.

Subjects: 40 middle class families with infants, ages 13 to 14 months.

Methods: Naturalistic observations were made of family interaction. Data were gathered using precoded checklists of infant, maternal, paternal, and spousal behaviors. Two 2-way, 2-hour observations of each family were made, usually in the late afternoon or early evening. Observation periods were completely unstructured. Exploratory competence was assessed in play situations at home. Each infant was presented with five prescribed toys in the presence of his/her mother, while an experimenter coded his/her behavior for 15 minutes.

Duration: April 1976-January 1978.

40-FA-2

CHANGE IN CHILDREN'S FRIENDSHIPS

Investigator(s): Maureen T. Hallinan, Ph.D., Associate Professor; and Nancy B. Tuma, Ph.D., Assistant Professor, Department of Sociology, Stanford University, Stanford, California 94305.

Purpose: To examine the effects (1) of individual characteristics, such as race and academic achievement, and (2) of organizational properties of the classroom, such as teachers' grouping practices on stability and change in children's friendship relations.

Subjects: Approximately 1,125 fourth, fifth, and sixth grade boys and girls and their teachers, racially and ethnically mixed in 45 classes in 10 public and private schools in California. Classes varied in racial composition and structural characteristics.

Methods: Longitudinal sociometric data, background information, information on teaching techniques, achievement over time, etc. were recorded over an academic year. Regression analysis and stochastic models were used to analyze the data.

Findings: Results of a pilot study show effects of similarity of sex, race, achievement, and of teachers' grouping practices on the stability of friendships among children and their tendency to become more friendly.

Duration: September 1976-August 1978.

Cooperating group(s): National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: Results are available from the National Institute of Mental Health.

40-FA-3

INFLUENCE OF YOUNG CHILD'S PEER CONTACTS IN SEX ROLES

Investigator(s): Evelyn Goodenough Pitcher, Ph.D., Professor and Chairperson; Penny Cram, Graduate Student; and Ellen Golding and Carol Baker, Undergraduate Students, Elliot-Pearson Department of Child Study, Tufts University, Medford, Massachusetts 02155.

Purpose: To document the process by which young children in free play find compelling guides for specifics of their behavior as males or females in their self-selected peer contacts.

Subjects: 118 boys and girls, ages 3 to 6, of average intelligence and varied socioeconomic backgrounds were observed in preschools from October to May from 1975 to 1977. Two-year-old children were added to the sample in 1978.

Methods: Observers who had established observational and coding reliability unobtrusively followed, with predetermined random order selection, a single child during free play, recording in narrative form all the child's activities during a half-hour period. Subsequently, the child's contacts with single other children were coded with reference to their affiliative or nonaffiliative qualities. Computer data from a pilot group of 61 children gave information on types and numbers of contacts, durations, initiations, and responses.

Findings: Young children in one-to-one peer contacts have significantly more interactions with the same sex than with children of the opposite sex, and this trend increases with age. Boy-boy contacts have significantly more frequent incidence of nonaffiliative components than do those of girl-girl. Thus, boys frequently engage in, and therefore potentially reinforce, behaviors categorized as assault, command, intrusion, insult. Girl-girl contacts have significantly more frequent incidence of affiliative behaviors than those of boy-boy. Behaviors categorized as nurturance, admiration, physical caress, awareness of human feelings, and the bonding of friendship occur more frequently in girl-girl contacts. Thus, girls frequently engage in, and thereby potentially reinforce, roles that are more positively social and less asocial and aggressive than those of boys. Cross-sex contacts tend to have more nonaffiliative than affiliative behaviors. Categorizing overall contacts of children as representing various types of play show significantly more dramatic play in boy-boy contacts, and such play deals primarily with issues of aggression, mastery, and power.

Duration: September 1975-September 1978.

Cooperating group(s): Preschools in the Boston area.

40-FA-4

EFFECTS OF COOPERATIVE, COMPETITIVE, AND INDIVIDUALISTIC SETS ON PERFORMANCE IN CHILDREN'S GROUPS

Investigator(s): Willard W. Hartup, Ed.D., Director; and Doran C. French, B.A., and Celia A. Brownell, B.A., Graduate Students, Institute of Child Development, University of Minnesota, 51 East River Road, Minneapolis, Minnesota 55455.

Purpose: To investigate the effects of age and of cooperative, individualistic, and competitive goal structures on children's group interaction.

Subjects: 147 children from two suburban St. Paul, Minnesota schools: 36 first grade boys, 39 first grade girls, 39 third grade boys, and 33 third grade girls.

Methods: Triads of children collectively built a series of towers with wooden blocks under different reward and instruction conditions (goal structures) designed to induce competitive, cooperative, or individualistic performance. Each triad participated in one of four goal structure conditions: (1) promotive (12 trials), (2) individualistic (12 trials), (3) contrient (6 trials), or (4) contrient (6 trials) followed by individualistic (6 trials). Dependent measures included the number of blocks on the completed towers, the number of times the towers fell, the relative frequency of turn-taking in block placement, and the relative contributions of blocks by individual members within the triads. Results were analyzed using multivariate analysis of variance.

Findings: Results indicated that relative to uninterrupted participation under the promotive (cooperation) or individualistic goal structures alone, performance was decremented if either of those goal structures was preceded by the contrient (competition) condition. These results were discussed in terms of both a "carryover effect" and a "practical effect"; the latter alternative seemed to explain the data more effectively. There were no age differences.

Duration: 1975-completed.

Cooperating group(s): (1) National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

(2) National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: *Journal of Experimental Child Psychology* (in press).

40-FA-5

**EFFECTS OF COMPETITIVE SETS ON CHILDREN'S GROUP PERFORMANCE:
CARRYOVER OR PRACTICE?**

Investigator(s): Willard W. Hartup, Ed.D., Director; and Doran C. French, B.A.; and Celia A. Brownell, B.A., Graduate Students, Institute of Child Development, University of Minnesota, 51 East River Road, Minneapolis, Minnesota 55455.

Purpose: To investigate the effects of age and of cooperative, individualistic, and competitive goal structures on children's group interaction.

Subjects: 141 children from two suburban St. Paul, Minnesota schools: 78 first grade boys and 63 third grade girls.

Methods: Triads of children collectively built a series of towers with wooden blocks under different reward and instruction conditions (goal structures) designed to induce competitive, cooperative, or individualistic performance. Each triad participated in six trials in the promotive condition (cooperation), followed by six trials in either the contrient (competitive), individualistic, or one of two neutral goal structure conditions, followed by six final trials in the promotive condition. Dependent measures included the number of blocks on the completed towers, the number of times the towers fell, the relative frequency of turn-taking in block placement, and the relative contribution of blocks by individual members within the triad. Results were analyzed using multivariate analysis of variance.

Duration: September 1976-completed.

Cooperating group(s): (1) National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

40-FA-6

PREADOLESCENT CULTURE AND FRIENDSHIP PATTERNS WITHIN ATHLETIC SETTINGS

Investigator(s): Gary Alan Fine, Ph.D., Assistant Professor, Department of Sociology, University of Minnesota, Minneapolis, Minnesota 55455.

Purpose: To determine the effects of children's friendship patterns on team success and failure; to determine the ways in which sociometric patterns change over time; and to understand the dissemination and creation of children's culture (team culture) in the Little League setting.

Subjects: Approximately 500 preadolescent males from five locales: three suburbs, one middle class urban neighborhood, and one exurban community. All subjects played Little League baseball.

Methods: Data were collected over 3 years using a variety of research techniques including participant observation, systematic observation, in-depth interviews, and questionnaires. Ten Little League baseball teams were studied in depth. Questionnaires were administered to all members of these leagues.

Findings: Team social structure is related to behavior in the face of success and failure, as a function of the extent to which the team friendship structure is hierarchically stratified. It was found that preadolescent culture is diffused through social networks.

Duration: April 1975-completed.

Cooperating group(s): National Science Foundation.

Publications: Fine, G.A. and Glassner, B. The promise and problems of participant observation with children. *Urban Life*, 1978.

40-FA-7**THE SERIOUS BUSINESS OF GROWING UP: A STUDY OF CHILDREN'S LIVES OUTSIDE OF SCHOOL**

Investigator(s): Elliott A. Medrich, Director, Children's Time Study, Childhood and Government Project, School of Law; and Charles S. Benson, Professor, School of Education, University of California, Berkeley, California 94720.

Purpose: To examine the effects of family (demography, structure, etc.), neighborhood, and sex on children's out-of-school activities and interests, with particular emphasis on describing any relationship between out-of-school life and in-school performance.

Subjects: 764 sixth grade boys and girls, ages 11 and 12; and their parents (59.8 percent black, 24.2 percent white, 4.6 percent Mexican-American, 9.2 percent Asian, and 2.2 percent other). Subjects were chosen randomly from 20 elementary schools using clustered stratified probability sampling techniques. The sample reflected the socioeconomic, ethnic, and geographic characteristics of Oakland, California.

Methods: Children were interviewed at home for approximately 1 hour. Parents filled out questionnaires while the interviews were in progress. Eighty-six percent of the eligible respondents were successfully interviewed between April and June 1976.

Duration: Winter 1976-Summer 1979.

Cooperating group(s): Ford Foundation.

Publications: Working papers are available from the Childhood and Government Project, School of Law, University of California.

40-FA-8**THE EMERGENCE OF CONCEPT AND SOCIAL COMPETENCE IN THE 18- TO 40-MONTH-OLD CHILD**

Investigator(s): Connie Steele, Ed.D., Assistant Professor; and Elizabeth Hrnir, B.S., Head Teacher, Home/Center Program, Department of Home and Family Life/Child Development and Family Relations, Texas Tech University, Lubbock, Texas 79409.

Purpose: To determine whether concept and social competence between 18 and 40 months emerges in a concurrent sequence; and to isolate a means for detecting the constructs used by the very young child in interfacing competent cognitive and social behaviors.

Subjects: 12 Mexican-American children, ages 18 to 40 months. Six children from one United Way Nursery were matched with six children from another United Way Nursery on sex and three mental age groupings (demonstrated on the Stanford-Binet, Form L-M and the Bayley Scales of Mental and Motor Development).

Methods: Three tasks were conceptualized as eliciting cognitive, social, and play participation behaviors: (1) behavior/language with a real telephone; (2) use of salt/flour/oil/water/clay as desired by the child; and (3) scribbling/drawing/other with magic marker on newspaper. Each of the six pairs of children were videotaped while involved in the three play situations. Each member of the six pairs in the three play situations had not seen the child with whom s/he was paired previously. Two observers coded each child's interactions to determine cognitive constructs, social (especially smiling responses), and play participation. The codings were used as the basis for comparing the children's average age for each level of cognitive, smiling, and play behavior in order to determine whether or not the cognitive and social (affective) behaviors may be perceived as occurring in hierarchical sequences that are related. Frequency tables reflected some of these comparisons. Chi-square analyses were used to determine differences, if any, between male and female responses and among the behaviors displayed by the three age groupings. Correlation procedures were used to determine the relationships, if any, among the three types of interactions.

Duration: June 1977-completed.

Cooperating group(s): Texas Tech University, Office of Research and Graduate Studies.

40-FA-9**SOCIAL DEVELOPMENT OF CHILDREN, AGES 5 TO 7**

Investigator(s): Rachel Hertz-Lazarowitz, Ph.D., Assistant Professor, School of Education, Haifa University, Haifa, Israel.

Purpose: To investigate social behavior and play patterns in same-age and mixed-age children in educational programs; and to test social organization and interaction patterns.

Subjects: Approximately 1,000 kindergartners and 1st graders in regular schools and in experimental schools in Israel. The children are from different socioeconomic backgrounds.

Methods: The research employed a field oriented observational technique. Group composition was varied across play periods to test for age composition (same vs. mixed) and its effect on behavior and play as well as on interaction patterns. Measures included a version of Parten (1932) and Piaget social and play categories. Multivariate analysis was applied to the data.

Findings: Results revealed a high level of positive behavior (almost 60 percent of total behavior); i.e., associative and cooperative. Older subjects demonstrated more solitary and observational behavior compared to younger children. Age composition affected social behavior and patterns of interaction. Young children interacted with older children more than vice versa. Home class exclusivity determined most social interaction. Children formed dyads half of the time. Mixed age composition reduced same-age interaction; i.e., in mixed age situations, children used the opportunity to play with different age children.

Duration: February 1976-September 1978.

Cooperating group(s): Israeli Ministry of Culture and Education.

40-FA-10**PEER GROUP SOCIAL BEHAVIOR OF PRESCHOOL CHILDREN**

Investigator(s): Janet Strayer, Ph.D., Assistant Professor, Department of Psychology, Simon Fraser University, Burnaby 2, British Columbia, Canada; and F. Strayer, Ph.D., University of Quebec, Montreal, Quebec, Canada.

Purpose: To investigate, ethologically, peer group social behaviors among preschool children.

Subjects: Three groups of 17, 19, and 10 normal children, ages 3 to 6.

Methods: Natural observation, sociometric, and standardized test data were collected for all subjects.

Findings: Data demonstrate the existence of relatively stable social structures based on both affiliative and agnostic behaviors.

Duration: Completed.

Publications: (1) A paper presented at the Canadian Psychological Association meeting, Vancouver, B.C., Canada, June 1977; Strayer, J. Social behavior in a group of children diagnosed as social misfits. (2) A symposium presented at the Society for Research in Child Development, New Orleans, Louisiana, March 1977.

40-FB-1**STUDY OF GENDER IDENTITY IN YOUNG CHILDREN**

Investigator(s): James A. Kleeman, M.D., 80 Bethmour Road, Bethany, Connecticut 06525.

Purpose: To determine the importance of environmental factors in the formation of gender identity.

Subjects: Seven girls and boys, ages 0 to 3.

Methods: Subjects are observed in their homes by the investigator approximately every 2 weeks. Observations are also recorded by the parents.

Duration: 1970-1980.

Publications: (1) Genital self-stimulation in infant and toddler girls. In Irwin M. Marcus and John J. Francis, *Masturbation from infancy to senescence*. New York: International Universities Press, Inc., 1975. Pp. 77-106. (2) Freud's views on early female sexuality in the light of direct child

observation. *Journal of the American Psychoanalytic Association*, 1977, 24. (3) The establishment of core gender identity in normal girls. Part I and Part II. *Archives of Sexual Behavior*, 1971, 1(2).

40-FD-1

MODIFYING STATUS ORDERS IN MIXED-SEX GROUPS OF 4TH AND 5TH GRADE CHILDREN: AN APPLICATION OF EXPECTATION STATES THEORY

Investigator(s): Marlaine E. Lockheed, Ph.D., Research Scientist; and Abigail M. Harris, M.A., Research Associate, Educational Testing Service, Princeton, New Jersey 08540.

Purpose: To examine the problem of male dominance in mixed-sex groups from the point of view of expectation states theory.

Subjects: 128 children in grades 4 and 5.

Methods: It was hypothesized that in experimental groups (1) girls will receive more action opportunities and positive evaluation than girls in control groups; (2) girls will make more performance outputs and negative evaluations than girls in control groups; (3) girls will be as equally influential as boys, but girls in control groups will be less influential than boys; and (4) leadership will be shared between boys and girls, but control groups will be male dominated. Children were assigned to groups of two boys and two girls matched for height, socioeconomic status, and sensitivity to context, as measured by the Children's Group Embedded Figures Test. The expectation training experimental treatment demands that the low status person be assigned high states on two specific performance characteristics, and that the high status person be assigned low states on these two characteristics. The selected characteristics were (1) competence at building a complex electronic apparatus, and (2) competence at teaching a peer to build the apparatus. In the experimental groups, girls were taught to build the apparatus (an electronic intrusion detector) and then were taught to teach a boy. In order to assure that the assignment to these relative states of the performance characteristic was successfully made, the behavior was videotaped, shown to both boys and girls, and reinforced. The relevance of the experimental treatment to the criterion task was made explicit. In the control condition, groups of two boys and two girls were videotaped as they were taught how to build the apparatus by an adult teacher. The criterion task was a board game designed to elicit interaction regarding a series of moves. Group members were required to decide on a series of paths to move a token across a maze to reach a goal in 14 rolls of a die. The game was constructed to meet the scope conditions of expectation states theory. Both behavioral self-report and observer rating data were obtained. The behavioral data were gathered from the videotapes of the groups playing the criterion task. Five categories of behavior were coded: performance output, action opportunity, positive evaluation, and negative evaluation (specified in the theory). A fifth category (which is tabulated as both an action opportunity and a performance output), performance output-action opportunity, was added to reflect the fact that suggestions were frequently phrased as questions. An influence measure was also used. Group members received influence credits if they proposed and/or defended the decision alternative which was selected. For each of the decisions required to complete the game, a person could receive a maximum of one credit for being the first to suggest the alternative or ideas and one credit for defending that alternative. Self-report data were obtained from the students regarding leadership of and interpersonal attraction within the group during the criterion task. In addition, they were interviewed regarding their perceptions of the intrusion detector. The female teachers of the girls were also asked to review the competency tapes and teaching tapes and to evaluate the girls' competency. The leadership patterns of experimental and control groups of both field dependent and field independent groups were examined as were the self-report of leadership and liking for the students in the criterion task groups.

Findings: Results showed that while there were little behavioral differences in power and influence between 4th and 5th graders in mixed-sex control groups, there were differences regarding perceived leadership. Children in control groups identified males as leaders twice as often as females; in treatment groups, perceived leadership was balanced. In addition, a predicted cognitive style by treatment effect was observed, and the activity rates of females in treated groups were

significantly higher than the activity rates of females in nontreated groups.

Duration: 1975-completed.

Cooperating group(s): East Windsor Regional School District.

Publications: (1) A paper presented at the American Sociological Association, Chicago, Illinois, September 1977: Lockheed, M.E. and Harris, A.M. Modifying status orders in mixed-sex groups of fourth and fifth grade children: An application of expectation states theory. (2) Information is available from Dr. Lockheed.

40-FE-1 DEVELOPMENTAL TRENDS IN NONVERBAL DISCLOSURE OF DECEPTION

Investigator(s): Robert S. Feldman, Ph.D., Assistant Professor, Department of Psychology, University of Massachusetts, Amherst, Massachusetts 01003.

Purpose: To determine the way in which the ability to control and manipulate nonverbal behavioral cues develops.

Subjects: 18 male and 18 female first grade, second grade, and college-age students.

Methods: Subjects were led to be verbally truthful or deceptive while they were interacting with an adult or were alone. Facial expressions were videotaped secretly.

Findings: Judges' ratings showed that there was significantly greater nonverbal disclosure of deception in the older subjects than in the younger ones and that, generally, the younger children showed greater control of their facial expressions.

Duration: September 1976-January 1978.

40-FE-2 TELEVISION CAREER AWARENESS PROJECT: FORMATIVE EVALUATION AND RESEARCH

Investigator(s): Frederick Williams, Ph.D., Dean, Annenberg School of Communications, University of Southern California, Los Angeles, California 90007.

Purpose: To formatively evaluate research information for a national television series designed to eliminate the effects of sex role stereotypes on play and work activities of children.

Subjects: Over 2,800 racially and ethnically mixed boys and girls, ages 9 to 12, from a purposive sample of 22 classrooms in Los Angeles and 75 classrooms from five other cities, plus additional classrooms as needed.

Methods: Major activities included testing of media, assessment of entry level perceptions, and attitudes relative to sex stereotypes. A survey was conducted to establish entry level perceptions and attitudes. A Latin square design was used to test program segments. Instruments included those used in past studies of sex stereotyping: comprehension and interest items to test response to program segments; and attitude items based on Fishbein's attitude change theory. Various multivariate techniques were used to analyze the data. They included multiple regression, discriminant analysis, cluster analysis, analysis of variance, and multidimensional scaling.

Findings: Perceptions of sex stereotypes have changed very little in comparison with previous studies. There is little variation in stereotypes between the ethnic groups surveyed (Chicano, Black, Anglo).

Duration: July 1976-April 1978.

Cooperating group(s): National Institute of Education, U.S. Department of Health, Education, and Welfare.

Publications: Technical reports are available from the National Institute of Education.

YOUNG CHILDREN'S RESPONSES TO DISCREPANT SOCIAL COMMUNICATIONS

Investigator(s): Alberta E. Siegel, Ph.D., Resident Physician and Professor of Psychology; and Fred R. Volkmar, M.D., Resident in Psychiatry, Department of Psychiatry and Behavioral Science, Medical Center, Stanford University, Stanford, California 94305.

Purpose: To understand how effectively communication can be conveyed to young children across visual (facial expressions and gestures) and auditory (tone of voice and content of speech) channels; and to understand how children resolve communications that are discrepant between the channels.

Subjects: 76 children tested to date: Study 1: 24 girls and 16 boys; Study 2: 23 boys and 9 girls. The children are ages 12 to 42 months and from middle class families.

Methods: Using a balanced design, different sequences of communication were presented across subjects. Each child served as his/her own control. Children were observed reacting to invitations to approach or stay away from an experimenter; visual and auditory cues were either congruent or incongruent. Data were analyzed with nonparametric statistics.

Findings: Young children respond appropriately to messages that come to them on either the visual or the auditory channel (e.g., the messages are either invitations to approach the experimenter or to stay away). When messages are discrepant between channels, children tend to rely on the auditory message.

Duration: June 1976-continuing.

Cooperating group(s): Stanford University, Boys Town Center for the Study of Youth Development.

Publications: (1) A paper presented at the Society for Research in Child Development, New Orleans, March 1977: Volkmar, F.R.; Hoder, E.L.; and Siegel, A.E. Discrepant social communications. (2) A paper presented at the American Psychological Association Meeting, Washington, D.C., September 1976: Volkmar, F.R. and Siegel, A.E. Young children's responses to discrepant social communications. (3) Copies of both papers are available from the investigators.

THE LISTENING BEHAVIOR OF MALE AND FEMALE CHILDREN

Investigator(s): Walburga von Raffler-Engel, Ph.D., Professor, Committee on Linguistics, Vanderbilt University, Box 26, Station B, Nashville, Tennessee 37205.

Purpose: To determine whether any socioeconomic, age, sex, or personality differences exist in the nonverbal behavior of children when they listen to an adult.

Subjects: 37 black American girls and boys, ages 3 to 15 (22 girls and 15 boys) from upper, middle, and lower class families. The sample also included one black female adult.

Methods: The adult told a story to each child or to two children of the same age. The children were told that they had to listen to the story in order to retell it to another child. The storytelling sessions were videotaped. The body movements of the children and the adult were analyzed using high speed and frozen frames. Measurements were made by counting the pulses from the sync-track.

Findings: Noticeable differences exist along socioeconomic, age, sex, and personality lines. Of particular interest are the personality differences, as these have been least explored in studies on child language.

Duration: 1974-continuing.

Cooperating group(s): WTVF Channel 5 TV, Nashville, Tennessee.

Publications: (1) von Raffler-Engel, W. Adult adjustment to children's communicative styles. In Donald M. Lance (Ed.), *Proceedings of the Mid-America Conference*. Columbia, Missouri: University of Missouri Press, 1978. (2) Hasham, B.H. The adjustment of the speaker to the hearer. In W. von Raffler-Engel and B. Hoffer (Eds.), *Aspects of nonverbal communication*. San Antonio, Texas: Trinity University Press, 1977.

THE NONVERBAL BEHAVIOR OF CHILDREN IN A LISTENING SITUATION: THEORETICAL IMPLICATIONS AND PRACTICAL APPLICATIONS

Investigator(s): Walburga von Raffler-Engel, Ph.D., Professor, Committee on Linguistics, Vanderbilt University, Box 26, Station B, Nashville, Tennessee 37205.

Purpose: To investigate the nonverbal behavior of children in listening situations.

Subjects: 37 black American girls and boys, ages 3 to 15 (22 girls and 15 boys) from upper, middle, and lower class families. The sample also included four adult observers (one white female principal investigator and three black males) and one black female adult participant.

Methods: From the total sample, six girls and six boys were selected for a subproject. A 2-minute videoframe, for each of these children being told a story by a young adult, was shown to a panel of four adults: a linguist, a pediatrician, a psychiatrist, and a school principal for comments on linguistics, mental health, and education.

Findings: The listening behavior of children varies depending on age, sex, and social class. Observations on linguistics: Verbal, nonverbal, and paralinguistic elements have to be combined to explain communicative behavior. Practical applications for education: Teachers should be aware of the differences in nonverbal behavior among social and ethnic groups. Practical applications for mental health: Children can be extremely disturbed when their regular good behavior is misinterpreted as bad behavior.

Duration: 1976-completed.

Cooperating group(s): (1) Meharry Medical College. (2) WTVF Channel 5 TV, Nashville, Tennessee.

Publications: (1) A short version of a paper presented to the 75th Annual Meeting of the American Anthropological Association, Washington, D.C., 1976 is available from the investigator. (2) A complete version of the paper appeared in Fred C.C. Peng (Ed.), *The science of body movement*. Hiroshima, Japan: Bunka-Hyron, 1977.

ADJUSTMENT OF THE ADULT TO THE CHILD

Investigator(s): Walburga von Raffler-Engel, Ph.D., Professor, Committee on Linguistics, Vanderbilt University, Box 26, Station B, Nashville, Tennessee 37205.

Purpose: To determine how children's behavior affects the behavior of adults.

Subjects: 37 black American girls and boys, ages 3 to 15 (22 girls and 15 boys) from upper, middle, and lower class families. The sample also included one young, black, female adult.

Methods: The adult told a short story to one child or to two children of the same age. The children were told that they had to listen so that eventually they could retell the story to another child. The storytelling sessions were videotaped. The body movements of the adult and of the children were analyzed using frozen frames, high speed, and regular speed replay. Measurements were made by counting pulses from the sync-track.

Findings: The adult adjusts his behavior to the child depending on his expectations given age and sex of the child plus cues he gets from the child. When there is conflict between the expectations and the actual behavior of the child, the adult shows hesitation and actively elicits further cues from the child.

Duration: 1975-completed.

Cooperating group(s): WTVF, Channel 5 TV, Nashville, Tennessee.

Publications: (1) von Raffler-Engel, W. Adult adjustment to children's communicative styles. In Donald M. Lance (Ed.), *Proceedings of the Mid-America Conference*. Columbia, Missouri: University of Missouri Press, 1978. (2) Hasham, B.H. The adjustment of the speaker to the hearer. In W. von Raffler-Engel and B. Hoffer (Eds.), *Aspects of nonverbal communication*. San Antonio, Texas: Trinity University Press, 1977.

40-FE-7**LEARNING AND MEDIA RESEARCH PROJECT**

Investigator(s): Charles R. Corder-Bolz, Ph.D., Director, Learning and Media Research Project, Southwest Educational Development Laboratory, 211 East 7th Street, Austin, Texas 78701.

Purpose: To determine the effects of television viewing habits, TV programs, and TV commercials upon children's social attitudes and behaviors.

Subjects: Boys and girls, ages 3 to 15, from Anglo, Black, and Chicano cultural groups.

Methods: The project included a survey of 887 families. Experimental studies were conducted to examine the effects of televised violence on young children, effects of sex role portrayals in commercials, and effects of parental intervention and mediation of TV programs.

Findings: Television affects almost all children in some form. TV has more influence than the father upon children's development. Children learn occupational sex stereotyping from TV commercials. Parents can modify the impact of television.

Duration: 1973-continuing.

Cooperating group(s): (1) Administration for Children, Youth, and Families; Office of Human Development Services; U.S. Department of Health, Education, and Welfare. (2) National Institute of Education; U.S. Department of Health, Education, and Welfare. (3) Texas Congress of Parents and Teachers.

Publications: (1) Corder-Bolz, C.R. and O'Bryant, S.L. Adult modification of the impact of television upon young children. *Journal of Communication* (in press). (2) O'Bryant, S.L. and Corder-Bolz, C.R. The effects of television on children's stereotyping of women's work roles. *Journal of Vocational Behavior* (in press). (3) Corder-Bolz, C.R. *Children and television*. Austin, Texas: Texas PTA, 1977.

40-FE-8**FACTORS AFFECTING THE MODELING OF MEDIA VIOLENCE**

Investigator(s): L. Rowell Huesmann, Ph.D., Associate Professor; and Leonard D. Eron, Ph.D., Department of Psychology, University of Illinois at Chicago Circle, P.O. Box 4348, Chicago, Illinois 60680.

Purpose: To determine what cognitive, familial, or environmental factors influence the extent to which a child imitates media violence.

Subjects: 748 children in grades 1 and 3 in 1976-77.

Methods: The research consists of a three-wave longitudinal study in which the children and parents are interviewed in each of 3 years.

Duration: June 1976-September 1979.

SPECIAL GROUPS OF CHILDREN

Physically Handicapped

40-GA-1

BIOMEDICAL ASSESSMENT OF THE DISABLED CHILD

Investigator(s): George Van B. Cochran, M.D., Director; Alice W. Garrett, M.D., Hospital Director; Raphael Levine, M.D., Attending Surgical Rehabilitation; Richard Derman, Biomedical Engineer; and Janet Gainey, Physical Therapist, Biomechanics Research Unit, Helen Hayes Hospital, Route 9W, West Haverstraw, New York 10993.

Purpose: To develop and operate a Physical Fitness Evaluation Unit to assess the objective, functional, neuromuscular, and cardiorespiratory status of disabled children.

Subjects: Pediatric inpatients and selected outpatients undergoing medical, surgical, or physical rehabilitation for musculoskeletal disabilities. Helen Hayes Hospital pediatric inpatients and selected outpatients began to be scheduled for the Evaluation Unit on a routine basis on January 1, 1976. Lower extremity function has been evaluated and patients have received follow-up testing after a new stage in their rehabilitation. Routine upper extremity testing began in 1976. The Unit was operating at full capacity rate of 250-300 evaluations per year at the end of 1976, including virtually all suitable pediatric patients treated at the institution.

Methods: Objective, functional, neuromuscular, and cardiorespiratory assessment of disabled children is needed to improve results of medical, surgical, and physical rehabilitation services. In most rehabilitation centers, patient evaluation is based primarily on subjective clinical examination. Evaluation of physical performance of pediatric patients by dynamic measurement of function is required to keep pace with technical advances in treatment so that the most effective therapeutic approach can be selected for individuals as well as disability groups. The project staff at Helen Hayes Hospital is developing and operating a Physical Function Evaluation Unit to monitor physical status of patients at intervals throughout their entire rehabilitation period. Patients are studied with special instrumentation while walking on a level walkway, on treadmills, and/or performing at an upper extremity evaluation station. Kinematic data from film and videotape are correlated with telemetered electromechanical data. These data include EMG, foot-contact sequence, force, pressure, accelerometer and goniometer measurements as relevant to the specific disability. Oxygen uptake and respiratory parameters during specific tasks also are determined as indices of rehabilitation progress. Standard protocols have been designed to fit each disability group so that progress of the individual can be compared to that of similar patients. The project staff hopes to aid in establishing indication for the most effective treatment for each disability, in monitoring patient progress, and in evaluating new approaches to rehabilitation of specific disabilities.

Duration: 1975-continuing.

Cooperating group(s): Maternal and Child Health and Crippled Children's Services; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: A paper presented at the 23rd Annual ORS, Las Vegas, Nevada, February 1977: Hahn, A.S. *et al.* Objective assessment of upper extremity functions in athetoid and spastic patients.

DEVELOPMENT OF INFANTS AT RISK FOR CENTRAL NERVOUS SYSTEM DYSFUNCTION

Investigator(s): Suzann K. Campbell, Ph.D., Associate Professor; Darlene DeSantis, Ph.D., Research Assistant Professor; and Irma J. Wilhelm, M.S., Research Associate, Division of Physical Therapy, Department of Medical Allied Health Professions, School of Medicine, Wing C (221H), University of North Carolina, Chapel Hill, North Carolina 27514.

Purpose: To provide information on early prognostic signs or patterns of development and on the natural history of infants at risk for developing moderate to severe central nervous system (CNS) dysfunction in the first year of life.

Subjects: 30 neonates: 20 infants at risk for developing CNS dysfunction identified through prenatal, intrapartum, and neonatal risk factors; and 10 low risk neonates who were matched with 10 of the high risk infants on race, sex, and certain socioeconomic factors.

Methods: All infants will be assessed with the Brazelton Neonatal Behavioral Assessment Scale during their hospital stay. Ten high risk infants and the 10 low risk controls will receive developmental assessments monthly (at ages adjusted for prematurity) through the first year of life. The remaining 10 high risk infants will be tested at quarterly intervals. The developmental assessments include: the Denver Developmental Screening Test, Wolanski Motor Evaluation, Milani-Comparetti Developmental Examination, Bayley Motor Scales and Infant Behavior Record, and the Ordinal Scales of Infant Psychological Development (Scale I, The Development of Visual Pursuit and the Permanence of Objects). These measures will be administered at each testing session. The Home Observation for Measurement of the Environment and the Bayley Mental Scales will be administered twice during the study. Data will be analyzed by discriminant analysis, growth curve analysis, correlational statistics, nonparametric tests, and multiple regression analyses.

Duration: July 1977-July 1979.

Cooperating group(s): American Academy for Cerebral Palsy and Developmental Medicine.

RELATIONS BETWEEN WORD MEANINGS IN SENTENCES AND WORD IDENTIFICATION BY HEARING IMPAIRED CHILDREN

Investigator(s): Michael S. Stinson, Ph.D., Post-Doctoral Research Fellow, Department of Otolaryngology, University of California, San Francisco, California 94143.

Purpose: To examine the responses of hearing impaired children to sentences in which one word provides the context to help the listener identify a second word which is difficult to identify solely on the basis of its acoustic cues.

Subjects: 21 hearing impaired girls and boys, ages 7.1 to 12. The severity of hearing loss in these children, as measured by average puretone threshold in the speech range for the better ear, averaged 77.24 dB (range of 61 to 103 dB).

Methods: Before testing, subjects learned to discriminate between pairs of words that are phonemically similar (e.g., boats-goats). The subjects then tried to identify single words from these pairs under four conditions: (1) when the relation between the word and its context-provider was reasonable, (2) when the relation was unreasonable and the context word was more appropriate to the other word of the pair, (3) when control sentences provided no contextual information, and (4) when the word was deleted from the spoken sentence and subjects were shown pictures of both paired words and asked to fill in the blank. Reasonable and unreasonable sentences were not provided at the same testing session.

Findings: There were significantly more correct identifications for reasonable than for control sentences, and significantly more incorrect identifications for unreasonable than for reasonable sentences.

Duration: Fall 1976-Fall 1978.

Cooperating group(s): National Institute for Neurological and Communicative Disorders and Stroke; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: (1) Review of: Vogel, S.A. Syntactic abilities in normal and dyslexic children. *Child Development Abstracts and Bibliography* (in press). (2) Stinson, M. and LaRiviere, C. Effects of rate and word boundary ambiguity upon recall by normal and impaired listeners. *Journal of Psycholinguistic Research*, 1976, 5, 185-194. (3) Review of: Dale, D.M.C. Language development in deaf and partially hearing children. *Child Development Abstracts and Bibliography*, 1976, 50, 197-198.

40-GC-2 METHODS FOR LANGUAGE DEVELOPMENT IN DEAF STUDENTS

Investigator(s): D.J. Power, Ph.D., Director of Research, Institute of Special Education, Burwood State College, 221 Burwood Highway, Burwood, Victoria, Australia 3125.

Purpose: To develop systematic activities and materials applying modern psycholinguistic, sociolinguistic, and TESL methods to teach language to older (over 10 years) deaf students.

Subjects: 169 boys and girls, ages 10 to 16, from three schools for the deaf. Subjects were without additional educationally significant handicaps.

Methods: A programmed text and a set of games/activities for teaching the passive voice to deaf students were developed by trials with individuals and groups. The materials were field tested twice with large samples of deaf children. The final form of the materials, "Systematic Language Instruction Package (SLIP)-I. The Passive Voice," is intended as a model for future development.

Duration: January 1976-December 1977.

Cooperating group(s): (1) Education Research and Development Committee, Australia. (2) Four Australian schools for the deaf assisted in the development of materials.

Publications: Power, D.J. and Hollingshead, A. Methods for language development in deaf students. 1. The passive voice. *Burwood Papers in Special Education*, No. 4, June 1977.

40-GC-3 CHILDHOOD CANCER: PSYCHOSOCIAL REHABILITATION

Investigator(s): Shirley B. Lansky, M.D., Associate Professor of Psychiatry and Pediatrics; and Nancy U. Cairns, Ph.D., Assistant Professor of Psychology and Pediatrics, University of Kansas Medical Center, 39th and Rainbow Boulevard, Kansas City, Kansas 66103.

Purpose: To assess the effects of childhood cancer on the social, emotional, and academic adjustment of patients and their families; to develop a program of therapeutic intervention to prevent or remediate negative ramifications; and to strengthen the patient's and family's coping mechanisms.

Subjects: Approximately 150 boys and girls, ages birth to late teens, who are in treatment or follow-up for cancer at the Pediatric Hematology/Oncology Division of the University of Kansas Medical Center.

Methods: A variety of methods have been used including interview, observation, and psychological testing. Patients and siblings have undergone or will complete personality, IQ, and achievement tests. Parents have completed the Minnesota Multiphasic Personality Inventory (MMPI) and measures of anxiety and depression. Marital pair analysis of the MMPI has been completed.

Findings: Findings to date indicate decreased wishful fantasy in patients; denial of problems by both patients and siblings; and few, if any, significant differences between patients and siblings. Parents show increased anxiety and depression and a relatively high level of marital stress. Nonetheless, the divorce rate among this group of parents is not significantly different from that in the overall population.

Duration: May 1975-April 1981.

Cooperating group(s): National Cancer Institute; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: Studies have appeared in the *Journal of the American Academy of Child Psychiatry*, *American Journal of Diseases of Children*, and the *Journal of the Kansas Medical Society*.

40-GC-4**COGNITIVE DEVELOPMENT AND EDUCATIONAL ACHIEVEMENT OF BLIND AND PARTIALLY SIGHTED CHILDREN DURING THEIR SCHOOL YEARS**

Investigator(s): M.J. Tobin, Ph.D., Director, Research Centre for the Education of the Visually Handicapped, 50 Wellington Road, Edgbaston, Birmingham B15 2EP, England.

Purpose: To investigate the cognitive development and educational achievement of blind and partially sighted children during their school years.

Subjects: 110 blind and partially sighted children in special schools.

Methods: A battery of tests was administered to the subjects including tests of intelligence, memory, touch, visual efficiency, concept formation, reading, mathematics, language, and personality.

Duration: September 1972-August 1984.

Cooperating group(s): (1) Royal National Institute for the Blind. (2) Schools for the blind and partially sighted.

40-GC-5**MULTIHANDICAPPED BLIND CHILDREN**

Investigator(s): M.J. Tobin, Ph.D., Director; and S.O. Myers, B.Sc., Research Worker, Research Centre for the Education of the Visually Handicapped, 50 Wellington Road, Edgbaston, Birmingham B15 2EP, England.

Purpose: To investigate memory capacities of visually handicapped children suffering from hearing loss.

Subjects: 35 visually handicapped and deaf children, ages 6 to 15.

Methods: Specially designed tests are administered to the subjects. They include tests for tactual/motor memory, memory for designs, patterns of movement, and object location.

Duration: September 1975-August 1978.

Cooperating group(s): (1) Condoval Hall School, Pathways Unit. (2) Gardner's Trust.

40-GC-6**GRAMMATICAL STRUCTURE OF THE WRITINGS OF APHASIC AND DEAF CHILDREN**

Investigator(s): Richard F. Cromer, Ph.D., Research Psychologist, Developmental Psychology Unit, British Medical Research Council, Drayton House, Gordon Street, London, England WC1H 0AN.

Purpose: To study the structure of the writings of a small group of children who can neither comprehend nor produce language.

Subjects: 10 receptive and expressive aphasic children, ages 7.6 to 16.1; 10 expressive aphasic children, ages 10.8 to 14.3; and 30 to 40 deaf children, ages 7 through 16.

Methods: The writing these children have been taught is somewhat disordered. In this study their writings are compared to those of deaf children in controlled situations. A carefully designed story is carried out silently with puppets. The children watch the presentation and then write the story; i.e., describe what they have seen. The story is designed to elicit adjectives, time adverbs, hypothetical statements, etc.

Findings: A preliminary analysis indicates that the totally aphasic children have difficulty with hierarchical ordering. This is not true of the deaf or expressive aphasics. A series of experiments has been planned to examine the hypothesis of a hierarchical deficit in the totally aphasic children.

Duration: Summer 1975-continuing.

Publications: Cromer, R.F. A linguistic approach to the study of childhood dysphasia. In Maria Wyke (Ed.), *Developmental Dysphasia*. New York and London: Academic Press (in press).

40-GD-1**PHOTOSENSITIVE EPILEPSY**

Investigator(s): Arnold Wilkins, Ph.D., Neuropsychologist, Applied Psychology Unit, British Medical Research Council, Cambridge CB2 2EF, England.

Purpose: To determine the nature of the physiological trigger underlying photosensitive seizures and to explore implications for therapy.

Subjects: 30 male and female photosensitive epileptics, ages 6 to 20.

Methods: Subjects, routinely referred to EEG departments, are tested for sensitivity to a variety of light patterns (e.g., television).

Findings: A high proportion of patients who are sensitive to intermittent light are also sensitive to static line patterns.

Duration: September 1975-continuing.

Cooperating group(s): Dr. Binnie, Instituut voor Epilepsie Bestrejdig, Heemstede, Holland.

Publications: (1) *British Medical Journal* (in press). (2) *Brain*, 1975, 98, 365-380.

40-GE-1**POSSIBLE EFFECTS OF HEARING AIDS ON AUDITORY SENSITIVITY IN CHILDREN**

Investigator(s): Robert Huskey, Ph.D., Assistant Superintendent; Sidney L. Schoenfeld, M.S., Director of Audiology, Stewart Halperin, Data Technician; and Jan B. Kerrick, Clinical Audiologist, Special School District of St. Louis County, 12110 Clayton Road, St. Louis, Missouri 63131.

Purpose: To determine if exposure to amplified sound through a hearing aid results in a temporary or permanent shift in hearing threshold.

Subjects: 40 children, ages 36 to 144 months, with sensorineural hearing loss who are using hearing aids for the first time.

Methods: The concept of relative threshold shift as originally documented by MacRae and Farrant (1965) is used in this study. Following establishment of baseline hearing levels and beginning use of a hearing aid, each child is tested twice daily for a 10-day period, once a week for 14 weeks, and once a month for 20 months. The overall experimental design entails both intersubject comparisons and intrasubject design techniques.

Duration: July 1975-March 1978.

Cooperating group(s): National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

40-GE-2**IDENTIFYING HANDICAPPED STUDENTS AND THEIR VOCATIONAL NEEDS FOR 1977-1982**

Investigator(s): Marion E. Franken, Ph.D., Project Associate, Wisconsin Vocational Studies Center, University of Wisconsin, 321 Education Building, Box 49, Madison, Wisconsin 53706.

Purpose: To determine the cognitive, psychomotor, and affective characteristics of handicapped students, ages 14 to 21 (as defined by federal regulations); and to determine their perceived needs in the community and in future education and training within the State of Wisconsin.

Subjects: 689 male and 325 female handicapped students, ages 14 to 21, in public and private educational institutions in Wisconsin.

Methods: Teachers of handicapped adolescent students were surveyed via a mailed machine-scorable instrument to determine their students' profiles, career goals, and postsecondary educational needs. Data were reported in total numbers and percents per category.

Findings: Students chiefly represented the mentally retarded, emotionally disturbed, and learning disability handicapped categories, but presented disabilities in all categories. Generally, students were low achievers and behind in graded placement; yet, most teachers thought that many of their students could benefit from vocational careers taught through post-secondary vocational edu-

cational institutions. To meet the needs of potential adult handicapped students, results indicate needs for planning and implementation of vocational programs, vocational educator preparation, and community activation and participation.

Duration: July 1976-completed.

Cooperating group(s): Vocational Education Amendments, 1968.

Publications: A research report is available from: Wisconsin Vocational Studies Center.

40-GE-3

A PREPARATORY READING PROGRAM FOR VISUALLY HANDICAPPED CHILDREN

Investigator(s): Barbara J. Rodabaugh, M.A., Project Director; and Amanda P. Hall, M.A., Associate Project Director, American Institutes for Research, P.O. Box 1113, Palo Alto, California 94302.

Purpose: To design and evaluate a program to teach reading readiness concepts to visually handicapped children in preschool, kindergarten, or primary grades, depending on their developmental level.

Subjects: Partially sighted and legally blind children, ages 4 to 6.

Methods: Materials were designed and tested on a pilot basis. The materials were evaluated at eight sites in the United States during the 1977-78 school year, in order to assess their effectiveness. A follow-up evaluation is planned to assess the effects of the program on visually handicapped children's ability to learn to read.

Duration: August 1976-May 1978.

Cooperating group(s): Bureau of Education for the Handicapped; Office of Education; Education Division; U.S. Department of Health, Education, and Welfare.

Publications: A final report will be submitted to Bureau of Education for the Handicapped.

40-GE-4

DESIGN, DEVELOPMENT, AND CLINICAL EVALUATION OF A WEARABLE VIBROTACTILE COMMUNICATION AID FOR PROFOUNDLY DEAF INFANTS

Investigator(s): Moise H. Goldstein, Jr., Sc.D., Professor, School of Medicine, Johns Hopkins University, 506 Traylor Research Building, 720 Rutland Avenue, Baltimore, Maryland 21205.

Purpose: To investigate the effectiveness of acoustically derived tactile stimulation for speech development and training of profoundly deaf children.

Subjects: A 19-month-old boy.

Methods: A single-channel, wearable tactile aid is being developed which transmits the temporal pattern of speech. It may also allow discrimination of voiced and unvoiced speech sounds. Pilot studies were done using a quite simple acoustic-to-tactile conversion and an aid that was not wearable. Progress is being assessed by a speech therapist working with the child and by audiological and speech tests with and without the aid.

Duration: May 1976-April 1979.

Cooperating group(s): March of Dimes.

Publications: Goldstein, M.H., Jr. and Stark, R.E. Modification of vocalizations of preschool deaf children by vibrotactile and visual displays. *Journal of the Acoustical Society of America*, June 1976, 59(6), 1477-1481.

40-GE-5

DETERMINING THE NEEDS OF AND DEVELOPING REMEDIAL PROGRAMS FOR DEAF CHILDREN FROM HISPANIC BACKGROUNDS

Investigator(s): Alan Lerman, Ph.D., Director of Research; and Edmund L. Cortez, M.Ed., Associate Director, CREED VII Project, Lexington School for the Deaf, 30th Avenue and 75th Street, Jackson Heights, New York 11370.

Purpose: To determine educationally relevant needs of deaf Hispanic children and their families; and to develop and assess educational programs to ameliorate these needs.

Subjects: 188 Hispanic boys and girls, ages 6 to 13, enrolled in special schools in the New York metropolitan area. A separate survey is being conducted of language impaired nondeaf Hispanic children.

Methods: The survey involved a two-stage evaluation program. The first was the examination of 219 separate items relating to home environment, home language environment, child's language, social-emotional development, school environment, special culture, and child's background variables. The second stage involved regression analyses with child's language functioning and social-emotional development as dependent variables.

Findings: Differences between children are largely accounted for by home variables and additional handicapping conditions. Home environment is defined by single vs. intact family and traditional vs. acculturated family background.

Duration: March 1976-June 1979.

Cooperating group(s): Cooperative Research Endeavors in Education of the Deaf (CREED). A consortium of New York State schools for the deaf with New York State Department of Education - Title I.

40-GE-6

A LONGITUDINAL NUTRITIONAL ANTHROPOMETRIC AND BIOCHEMICAL EVALUATION OF CHILDREN WITH CYSTIC FIBROSIS: RESPONSES TO DIETARY SUPPLEMENTATION

Investigator(s): A. Harold Lubin, M.D., Assistant Professor and Director; Judy Bonner; and Ronald D. Pearson, Department of Pediatric Nutrition, Children's Hospital, 700 Children's Drive, Columbus, Ohio 43205.

Purpose: To determine the effects of a supplemental feeding plan for children with cystic fibrosis.

Subjects: 60 patients, ages 4 to 12, selected from those currently being followed in the Cystic Fibrosis Clinic of the Columbus Children's Hospital. Subjects are equally distributed by age.

Methods: Subjects will be followed for a 2-year period. Groups were divided into severe, moderate, and minimal degrees of involvement with cystic fibrosis based on the Shwachman health evaluation ratings. Ten children had previously been evaluated with nitrogen balance studies in hospital and had demonstrated improved nitrogen utilization and decreased nitrogen excretion following supplementation of their usual dietary intake with a chemically defined formula supplying approximately one-third of the Recommended Dietary Allowance for protein and food energy. These children continued to receive the described chemically defined formula (vivonex) throughout the study. Ten children (matched for age, sex, and degree of disease severity) received their usual dietary intake and then their usual dietary intake supplemented with foods which supply approximately one-third of the Recommended Dietary Allowance for protein and food energy on successive nitrogen balance periods in the Columbus Children's Hospital Clinical Studies Center. These 10 children were also followed during the period of the study when they were on their usual dietary intake with food supplementation, and their responses were compared with the responses of those children receiving the supplement of a chemically defined formula. Twenty children receiving a dietary supplement (vivonex) to their usual dietary intake were followed prospectively and were chosen from moderate and severe disease groups respectively. Age, sex, and cystic fibrosis disease severity matched controls (N = 20) were evaluated for the entire period of the study on all parameters outlined for the experimental groups. The children continued to receive comprehensive medical treatment through the Cystic Fibrosis Center. Each child received antibiotic therapy, enzyme replacement, vitamin supplementation, aerosol inhalation, chest physiotherapy, and mist tent therapy as prescribed on an individual basis. As a result of the natural variability of cystic fibrosis, the therapeutic regimens for individual patients did vary. However, insurance that medical care was consistently applied for all children in both groups was provided by having a single physician prescribe treatment for all of the children during the 2-year period. Prior to the beginning of the investigation, each child received a complete medical examination which included: chest roentgenograms; pulmonary physical assessment; complete pulmonary

function studies including spirometry, thoracic gas volumes, and blood gases; throat culture; anthropometric evaluation; hand-wrist films for bone age; complete dietary assessment; physical examination and evaluation using the Shwachman rating scale; and blood chemistries. These procedures were repeated at approximate intervals of 6 months. In addition, at intervals of 6 weeks to 3 months, each child received a medical examination which included: a physical examination; throat culture; record of infection or of other illness; record of days missed from school, if applicable; height and weight measurements; dietary record; and physical activity and exercise tolerance measures.

Duration: April 1977-March 1978.

Cooperating group(s): (1) Cystic Fibrosis Foundation. (2) Children's Hospital Research Foundation, Eaton Laboratories. (3) Ohio State University, Department of Preventive Medicine, Biometrics Division. (4) Battelle Memorial Institute.

40-GE-7 **SCHOOLS COUNCIL LOOK AND THINK PROJECT**

Investigator(s): M.J. Tobin, Ph.D., Co-Director, Look and Think Project, and Director; and F.H.G. Tooze, B.Sc., Senior Research Associate, Research Centre for the Education of the Visually Handicapped, 50 Wellington Road, Edgbaston, Birmingham B15 2EP, England; and E.K. Chapman, B.A., Co-Director, Look and Think Project, University of Birmingham, Birmingham, England.

Purpose: To teach children with residual vision to make use of their visual perceptual abilities more efficiently.

Subjects: Visually handicapped children, ages 5 to 11, in special schools.

Methods: Teaching programs were evaluated by comparing the posttest performance of experimental and control groups. The posttests consisted of the relevant skill units of a checklist devised for the project.

Duration: October 1974-September 1977.

Cooperating group(s): (1) Schools Council, England. (2) All schools for the blind and partially sighted throughout England.

Publications: A handbook for teachers will be published by Schools Council.

40-GE-8 **SEXUAL INFORMATION AND ATTITUDES OF HANDICAPPED ADOLESCENTS**

Investigator(s): Michael R. Nathan, M.D., Fellow in Behavioral Pediatrics; Sharon Hostler, M.D.; and Pepi Linden, M.A., Department of Child and Adolescent Psychiatry and Children's Rehabilitation Center, University of Virginia, Box 202, Charlottesville, Virginia 22906.

Purpose: To evaluate the needs of a handicapped adolescent population related to self-image and sexuality as compared with nonhandicapped teens.

Subjects: Approximately 130 handicapped or chronically ill girls and boys, ages 12 to 19. The subjects were followed as inpatients and outpatients of the Children's Rehabilitation Center. Handicaps include congenital defects, neuromuscular diseases, scoliosis, cystic fibrosis, and orthopedic defects.

Methods: Each adolescent was seen at home, in the clinic, or in the hospital by a tester who administered a questionnaire developed for this study, the Piers-Harris Self-Concept Scale, Offer Self-Image Questionnaire, and the Draw-a-Human Figure Test. A control group from the public school system (matched for age, sex, and race) will receive the same battery. The researchers hope to demonstrate differences and similarities relating to specific handicap as well as handicap vs. control. Information will be used to help design therapeutic counseling and sex education programs for handicapped adolescents and their families.

Duration: December 1977-December 1978.

Cooperating group(s): University of Virginia, Department of Psychology.

40-GE-9

FAMILY PERFORMANCE STUDY II

Investigator(s): Cordelia C. Robinson, Ph.D., Director, Infant Development Program, Meyer Children's Rehabilitation Institute, University of Nebraska Medical Center, 444 South 44th Street, Omaha, Nebraska 68131; and Steven A. Rosenberg, Ph.D., Assistant Professor, School of Medicine, Creighton University, 2500 California Street, Omaha, Nebraska 68178.

Purpose: To assess the relationship between maternal-infant teaching skills and parent and family characteristics (commitment, consensus, boundary permeability, resources).

Subjects: 60 handicapped children, ages 0 to 3, who are enrolled in a parent intervention program.

Methods: Families are interviewed when the child enters the infant development program (a parent mediated early intervention program) to collect family characteristics measures. Parents are videotaped working with their child every 2 months, and the tapes are rated to assess parent teaching skills. Bayley Scales of Infant Development data are collected on the children. Regression techniques will be used to predict the dependent variables of child progress and parent skills. The information will be used to modify programs for families who do not improve in function within the context of the infant program.

Duration: August 1976-Spring 1978.

Cooperating group(s): Bureau of Education for the Handicapped; Office of Education; Education Division; U.S. Department of Health, Education, and Welfare.

Publications: Information is available from the investigators.

40-GF-1

NATIONAL WILMS' TUMOR STUDY

Investigator(s): Giulio J. D'Angio, M.D., Director, Children's Cancer Research Center, University of Pennsylvania Cancer Center, Children's Hospital of Philadelphia, Room 9092, 34th and Civic Center Boulevard, Philadelphia, Pennsylvania 19104.

Purpose: To refine methods proven to be of value in treatment of children with Wilms' tumor; and to determine whether the addition of adriamycin to vincristine and actinomycin-D improves survival rates in patients with moderately advanced or metastatic Wilms' tumor.

Subjects: 800 children patients in 1977 with approximately 100 new subjects per year. The children are all ages and both sexes.

Methods: The study is a randomized cooperative clinical trial. Patients are randomized by telephone call to the Data and Statistical Center (DSC), which also accumulates relevant clinical data as the study proceeds. Periodic reports are prepared by the DSC and are submitted to the National Wilms' Tumor Study Committee. Data on children are collected from more than 50 institutions.

Findings: Radiation therapy is not necessary in the management of babies with early stages of Wilms' tumor. The combination of actinomycin and vincristine is better than either one alone in children with moderately advanced metastatic Wilms' tumor.

Duration: 1969-1980.

Cooperating group(s): Children's Cancer Study Group.

Publications: D'Angio, G.J. The treatment of Wilms' tumor. Results of the National Wilms' Tumor Study. *Cancer*, 1976, 38, 633-646.

40-GF-2

PROTEIN STUDIES IN TUBEROUS SCLEROSIS

Investigator(s): A.T. Rundle, Ph.D., F.I. Biol., M.R.C. Path., Chief Biochemist; and B. Sudell, B.Sc., Senior Biochemist, St. Lawrence's Hospital, Caterham, Surrey, England.

Purpose: To investigate serum, tissue, and onco-foeto proteins (1) in known tuberous sclerosis subjects, their siblings, and parents; and (2) in suspected forme fruste subjects, in order to develop methods to back up genetic counseling.

Subjects: Children with tuberous sclerosis, their siblings, and parents.

Methods: Protein estimations are made using radial diffusion, starch-gel electrophoresis, radio-immune assay procedures, etc. The specific data on 15 proteins (to-date) in the affected subjects will be related to data for the rest of the family and to established normal data. Eventually, discriminant function analysis will be applied to the data.

Findings: Data indicate no specific changes in the frequency of a number of serum and tissue polymorphic proteins, but regular changes in both affected and suspected forme fruste subjects in the so-called "acute-phase" proteins.

Duration: 1974-continuing.

Publications: (1) Rundle, A.T. and Atkin, J. Serum α_2 : Macroglobulin levels in tuberous sclerosis. *Journal of Mental Deficiency Research*, 1976, 20, 231-236. (2) Rundle, A.T. Plasma acute-phase reactant proteins in tuberous sclerosis. *Journal of Mental Deficiency Research*, 1976, 20, 237-242.

40-GF-3 CYTOGENETICS OF HUMAN CLONAL NEOPLASMS

Investigator(s): Frederick Hecht, M.D., Professor of Pediatrics, Genetics Clinic CCD/CDRC, Health Sciences Center, University of Oregon, P.O. Box 574, Portland, Oregon 97207.

Purpose: To study the relationships between chromosome changes and lymphocytic leukemia and lymphoma in humans.

Subjects: Approximately 100 subjects a year, both sexes, all ages.

Methods: The research methodology includes standard cell culture and chromosome bonding techniques and standard human biochemical techniques.

Duration: 1974-1980.

Cooperating group(s): National Cancer Institute; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: Information is available from the investigator.

Mentally Retarded

40-HC-1 COGNITIVE STRATEGIES IN THE MENTALLY RETARDED

Investigator(s): Leonard S. Blackman, Ph.D., Principal Investigator; Herman H. Spitz, Ph.D.; and Linda H. Bilsky, Ph.D., Project Director, Research and Demonstration Center, Teachers College, Columbia University, Box 51, 525 West 120th Street, New York, New York 10027.

Purpose: To investigate cognitive strategies in mentally retarded children.

Subjects: Educable mentally retarded and nonretarded boys and girls, ages 13 to 17, of equal MA.

Methods: Many studies are underway employing various methods. Refer to Publications below for recent papers related to the research.

Duration: 1973-continuing.

Cooperating group(s): (1) New York Board of Education. (2) New Jersey School System. (3) Johnstone Training and Research Center.

Publications: Information is available from the investigators. Recent papers in process and submitted to various journals include: (1) Glidden, L.M. Stimulus relations, blocking and sorting in the free recall and organization of EMR adolescents. (2) Glidden, L.M. and Mar, H. Availability and accessibility of information in the semantic memory of retarded and nonretarded adolescents. (3) Glidden, L.M. *et al.* Sentence mediation and stimulus blocking in free recall. (4) Bilsky, L.H. *et al.* Attempts to facilitate class inclusion performance of mildly retarded adolescents: Feedback and strategy training. (5) Mar, H. and Glidden, L.M. Semantic and acoustic cues in the recall of retarded adolescents. (6) Glidden, L.M. *et al.* Blocking and delayed free recall. (7) Bilsky, L.H. and Whittemore, C. Training of a categorical clustering strategy with EMR adolescents.

(8) Sonnenborn, V. and Bilsky, L.H. Intentional memory in mildly retarded adolescents as a function of semantic analysis. (9) Blackman, L.S. *et al.* The use of constraint-seeking questions by mentally retarded and normal individuals. (10) Burger, A.L. and Blackman, L.S. Imagery and verbal mediation in PA learning of educable mentally retarded adolescents.

40-HH-1

PEER IMITATION TRAINING WITH MENTALLY RETARDED AND NORMAL TODDLERS

Investigator(s): Thomas P. Cooke, Ph.D., Coordinator of Special Education; and Tony Apollani, Ph.D., Assistant Professor, Department of Special Education, California State College, Sonoma, California 94928.

Purpose: To investigate methods of peer imitation training with mentally retarded and normal children in integrated preschool settings.

Subjects: Eight girls and eight boys, ages 2½ to 5½.

Methods: The study employed an ideographic or applied behavior analytic research design (see *Tactics of Scientific Research*, Sidman, 1960).

Findings: Although mentally retarded preschoolers do not spontaneously imitate or socially interact with normal classmates in integrated settings, behavior modification training can produce these socially significant outcomes.

Duration: September 1975-June 1978.

Cooperating group(s): (1) California State Department of Education, Title VIB. (2) Sonoma County Office of Education. (3) Santa Rosa Jr. College.

Publications: A chapter in B.M. Guralnick (Ed.), *Integrated preschool intervention*. Philadelphia: University Park Press, 1977.

40-HH-2

MODIFYING RETARDATE'S SELF-INJURIOUS BEHAVIOR

Investigator(s): Stephen R. Schroeder, Ph.D., Assistant Director for Research Development, Division for Disorders of Development and Learning BSRC, Child Development Research Institute, University of North Carolina, Chapel Hill, North Carolina 27514.

Purpose: To develop a program to deal with self-injurious behavior in a large state facility for the retarded.

Subjects: 208 multiply handicapped, severely and profoundly retarded, self-injurious persons, ages 5 to 70 (55 percent female).

Methods: Single subject designs with interval recording and ecological assessment were used to assess the effects of programming alternative sources of reinforcement to reduce the occasions and the need to perform self-injurious acts.

Findings: It has been possible to reduce severe self-injurious behaviors with benign behavior intervention without the use of any intrusive punishment.

Duration: July 1974-completed.

Cooperating group(s): Hospital Improvement Program; Administration for Children, Youth, and Families; Office of Human Development Services; U.S. Department of Health, Education, and Welfare.

Publications: A final report is available from the Office of Human Development Services.

40-HH-3

RESULTS OF PROBLEM SOLVING TRAINING INTERVENTION PROGRAM FOR USE BY TEACHERS OF RETARDED EDUCABLE ELEMENTARY CHILDREN (REE)

Investigator(s): Kathryn N. Healey, Ph.D., Assistant Director, Consultation and Education Services, Hahnemann Community Mental Health/Mental Retardation Center, 314 North Broad Street, 12th Floor, Philadelphia, Pennsylvania 19102.

Purpose: To investigate the relationships between certain social cognitive skills and social behaviors in retarded educable elementary (REE) children, and to determine the effects of social problem solving training on the social cognitive skills and social behavior of REE children.

Subjects: 73 REE children, ages 6.01 to 14.05; IQ range, 45 to 78, from six inner city schools.

Methods: Two social cognitive skills were examined. The ability to generate alternative solutions to a presented social problem was measured by the Preschool Interpersonal Problem Solving Test. Skill in conceptualizing the steps needed to reach a desired goal, including considerations of the time element and potential obstacles (means-ends thinking) was measured by the children's version of the Means-Ends Problem Solving Test. Social behaviors were measured by the Hahnmann Preschool Behavior Scale and the American Association on Mental Deficiency Adaptive Behavior Scale (public school version). Each teacher completed these scales on all children in the class. The Interpersonal Cognitive Problem Solving Program, as developed by Shure and Spivack (1975), was implemented in three classes for REE children. Training consisted of helping children (1) to identify their own and other people's emotions, (2) to recognize the elements in a social problem situation, (3) to generate alternative solutions, (4) to consider the consequences of various courses of action, and (5) to appreciate the possible causes of interpersonal problems. In addition to the formal use of the daily lessons, the teachers were encouraged to incorporate the principles of social problem solving into their regular curriculum.

Findings: The hypothesis that socially adjusted REE children would also be better social problem solvers was confirmed. Inhibited REE children were found to be more deficient in their social cognitive abilities than either their well-adjusted or impulsive peers. It was also found that alternatives and means-ends thinking ability in REE children were both positively related to chronological age. Mental age was found to be correlated with alternative thinking ability, but not means-ends thinking ability. Training did not produce significant changes in social cognitive skills or social behavior. However, findings were in the expected direction and suggest that a longer intervention program would be of benefit to REE children.

Duration: September 1976-completed.

Publications: Information is available from the investigator.

Gifted

40-1A-1

A SOCIOLOGICAL STUDY OF GIFTEDNESS AMONG ELEMENTARY MEXICAN-AMERICAN STUDENTS

Investigator(s): Stephen W. Brown, Ed.D., Academic Coordinator, Base Education Office, Webster College, Brooks Air Force Base, Texas 78236.

Purpose: To examine the effects of poverty, family milieu, and educational deprivation on Mexican-American elementary students in predominantly Mexican-American schools.

Subjects: 200 Mexican-American girls and boys, ages 6 to 10.

Methods: Subjects were identified by race and then a table of random numbers was applied. Group IQ tests were administered to determine gifted students. Poverty level was determined from census data; family pattern, by demographic analysis and questionnaires. Analysis of variance was employed.

Findings: Poverty has a significant effect on giftedness. There is some indication that diet may also have an effect on giftedness.

Duration: September 1976-January 1978.

Cooperating group(s): Predominantly Mexican-American school districts.

40-1A-2**SIMILARITIES AND DIFFERENCES AMONG YOUNG GIFTED CHILDREN WHO DID OR DID NOT PARTICIPATE IN AN EARLY EDUCATION PROGRAM**

Investigator(s): A. Harry Passow, Ed.D., Professor; John S. Klein, M.A., Research Assistant; and Ahmed Mead, M.A., Research Assistant, Teachers College, Columbia University, 525 West 120th Street, New York, New York 10027.

Purpose: To compare (on IQ, achievement in reading, spelling, arithmetic, and school, home, and peer relationships, etc.) children selected 3 years earlier for a special program for young gifted children to children equally qualified but not selected for the program.

Subjects: 28 children who had participated in the Astor Program for Gifted Children: mean age, 8.0; mean IQ on Stanford-Binet, 137.35; and 12 children who were equally qualified but not selected: mean age, 7.6; mean IQ, 132.

Methods: All children were administered the Stanford-Binet Intelligence Test, the Goodenough Draw-a-Man Test, the Wide Range Achievement Test (reading, spelling, arithmetic), and were interviewed concerning school, home, and self-perceptions. Parents of both sets of children were interviewed concerning their child's development and completed a 23-item inventory of the child's traits and characteristics.

Findings: The sample proved too small to treat statistically, but by inspection, groups appeared to be more similar than different, despite the fact that the Astor Program had provided specially for gifted children.

Duration: February 1977-August 1977.

Cooperating group(s): Vincent Astor Foundation, New York, New York.

Publications: A 42-page final report is available from the investigators.

40-1A-3**THE LIVES OF 99 CREATIVE ADULTS AS CHILDREN**

Investigator(s): Ann Fabe Isaacs, Ph.D., Chief Executive Officer, National Association for Creative Children and Adults, 8080 Springvalley Drive, Cincinnati, Ohio 45236.

Purpose: To determine the role of parents as stimulants or deterrents to children's creative productivity.

Subjects: 99 middle to upper middle class children and their families followed over a 25-year period. Most of the subject children had been enrolled in the same preschool 25 years ago. They were determined to be gifted/talented on the basis of the Stanford-Binet Intelligence Scale, which was administered upon entrance into preschool and annually thereafter.

Methods: This is a longitudinal study of 99 families which began 25 years ago. The researcher employed the case study method. Subjects, siblings, parents, teachers, and others are involved who may have influenced the creative development of the subject. Methods included observation, testing, follow-up evaluation of performance and achievement, and parental interviews.

Findings: No one contributing variable is associated with optimum development. Different parental approaches toward gifted children have been observed. Many gifted children do not perceive themselves as gifted when they are adults and therefore lose motivation/inspiration to use their talents.

Duration: September 1976-September 1978.

Publications: (1) Excerpts from a forthcoming book will be published in the *Creative Child and Adult Quarterly* and in *Child Development Abstracts and Bibliography*. (2) Information on the National Association for Creative Children and Adults is available from the investigator. Please send a self-addressed envelope and \$0.25.

Emotionally Disturbed and Mentally III

40-JB-1

SOCIAL DECENTRATION AND EMOTIONAL DISTURBANCE IN CHILDREN

Investigator(s): E. Gelcer, Ph.D., Psychologist, Child and Adolescent Service, Clarke Institute of Psychiatry, 250 College Street, Toronto, Ontario, Canada M5T 1R8.

Purpose: To investigate social deccentration and emotional disturbance in children.

Subjects: Five boys in day treatment, ages 11 to 12.

Methods: Subjects were pre- and posttested on Piagetian conservation tasks involving both social- as well as object-decentering. The treatment consisted of daily 1½-hour in-group sessions focusing on object perception and decentering in thought. The goal was to produce conflict along Piaget's equilibration model.

Duration: Summer 1976 and 1977-September 1977.

Cooperating group(s): Clarke Institute of Psychiatry, Day Treatment Program.

Publications: (1) Social deccentration: Its measurement and training in emotionally disturbed institutionalized children. *Proceedings of the 7th Annual International Interdisciplinary Conference on Piagetian Theory and the Helping Professions*. Los Angeles: University of Southern California Press, 1977. (2) Review of Naunburg, M. An introduction to art therapy. *The Ontario Psychologist*, August 1976, 8(4).

40-JB-2

ALTRUISM IN EMOTIONALLY DISTURBED BOYS

Investigator(s): Margaret R. O'Connor, Ph.D., Staff Psychologist, Division of Child Psychiatry, Children's Memorial Hospital, 2300 Children's Plaza, Chicago, Illinois 60614.

Purpose: To assess the frequency and consistency of altruistic behavior in emotionally disturbed boys; to assess the correspondence of altruism to symptom patterns; and to assess the correspondence of altruism to self-esteem.

Subjects: 42 boys, ages 9 to 12, from a clinic population.

Methods: Data were collected from the Louisville Behavior Checklist administered to parents; the Coopersmith Self-Esteem Inventory and Teacher Behavior Report; teacher assessment of behavioral altruism; and controlled laboratory assessment of three forms of altruistic behavior (sharing, helping, comforting). Data will be compared to those from a normal population.

Findings: Frequency of altruistic behavior appears very low. Self-esteem shows no systematic relation to altruism. Symptom factors show varying relation to specific altruistic behaviors.

Duration: February 1977-continuing.

40-JC-1

INTERACTIONAL PATTERNS OF HYPERACTIVE CHILDREN

Investigator(s): Harold J. Harris, M.D., Director of Training, Division of Child Psychiatry, Department of Psychiatry, Medical Center, Duke University, 402 Trent Street, Durham, North Carolina 27705.

Purpose: To assess the interactional patterns of hyperactive children with their parents, siblings, peers, and teachers.

Subjects: 40 boys, ages 6 to 10.

Methods: Standard observational techniques are employed and specialized techniques are developed. Trained observers will use the techniques in the children's homes and schools.

Duration: January 1977-December 1978.

Cooperating group(s): Referring pediatricians and school psychologists.

PSYCHOPHYSIOLOGICAL STUDIES IN HYPERACTIVE CHILDREN

Investigator(s): James H. Satterfield, M.D., Director of Research, Hyperkinetic Children's Clinic, Gateways Hospital, 1891 Effie Street, Los Angeles, California 90026.

Purpose: To ascertain long-term risks and benefits of stimulant drug treatment in hyperactive children.

Subjects: 75 hyperactive boys, ages 6 to 12.

Methods: The current study is a clinical and laboratory study of the long-term course of treatment (3 years) of a group of hyperactive children. Clinical assessment includes clinical laboratory studies; historical information on the child; behavior rating scales from parents and teachers; psychiatric, psychometric, and neurological evaluations; and electrophysiological studies. Treatment includes medication plus a wide variety of types of psychotherapy.

Findings: One-year evaluations show this group of children improved on all measures utilized.

Duration: December 1973-December 1978.

Publications: (1) Satterfield, J.H. Central and autonomic nervous system function in the hyperactive child syndrome: Treatment and research. In A. Davids (Ed.), *Child personality and psychopathology: Current topics, Volume 3*. John Wiley and Sons, Ltd., 1976. (2) Satterfield, J.H. and Cantwell, D.P. Psychopharmacology in the prevention of antisocial and delinquent behavior. In R. Gittelman-Klein (Ed.), *Child psychopharmacology*. New York: Behavioral Publications, 1976. (3) Satterfield, J.H. *et al.* CNS arousal level in hyperactive children. In S. Sankar (Ed.), *Psychopharmacology of childhood*. PJD Publications, Ltd., 1976. (4) Satterfield, J.H. *et al.* Neurophysiological studies of the hyperkinetic child. In D. Klein and R. Klein (Eds.), *Annual review of psychological drug treatment*. New York: Bruner-Mazel, 1975.

ASTHMA QUESTIONNAIRE

Investigator(s): Percy H. Jennings, M.D., Pediatrician, Berkeley Pediatric Group, 1650 Walnut Street, Berkeley, California 94709.

Purpose: To compare answers to a questionnaire on asthmatic children with former descriptions of asthmatic children by their mothers; and to discern the presence or absence of psychosomatic asthma in the children.

Subjects: To date 25 questionnaires have been filled out by mothers of asthmatic children.

Methods: Descriptions of asthmatic children were collected from mothers 15 years ago. The same mothers recently responded to a questionnaire. The answers will be compared.

Duration: 1974-1978.

Publications: *Journal of Psychosomatic Medicine*, July-August 1964.

BLOOD SEROTONIN AND PLATELETS IN AUTISTIC CHILDREN

Investigator(s): Arthur Yuwiler, Ph.D., Chief; and E. Geller, Ph.D., Assistant Chief, Neurobiochemistry Lab T-85, Veterans Administration, Wilshire and Sawtelle Boulevards, Los Angeles, California 90073; and Edward R. Ritvo, M.D., Professor, Department of Psychiatry, University of California, Los Angeles, California 90024.

Purpose: To determine why autistic children appear to have higher blood serotonin concentration, platelet counts, and serotonin/platelet than age matched normal children or other hospitalized children.

Subjects: 70 girls and boys, ages 3 months to 11 years, diagnosed as autistic by the criteria of Ornitz and Ritvo.

Methods: The investigators are attempting to determine if the differences observed to date could reflect a difference in platelet populations or distribution. Platelets are separated into populations of differing density by centrifugation through a discontinuous density gradient. Serotonin concentration, monoamine oxidase activity, and platelet volumes are determined on each of the platelet

subpopulations obtained in this manner. In addition, the distribution of platelet sizes in blood from autistic children is being determined.

Findings: There is evidence that 5HT in some platelet populations (defined by density centrifugation) is twice that per platelet of other platelet populations.

Duration: 1973-continuing.

40-JE-2 MEMORY PROCESSES IN AUTISTIC CHILDREN

Investigator(s): Jill Boucher, Ph.D., Senior Research Fellow, Charles Burns Clinic, Queensbridge Road, Moseley, Birmingham, England B13 8QD.

Purpose: To define the perceptual characteristics affecting the learning and memory processes of autistic children.

Subjects: 30 nuclear autistic children, ages 5 to 14, with severe language distortion, severe distortion of social relationships, and severe ritualistic phenomena. Control children, of the same age and with developmental language disorders, were matched for IQ.

Methods: Subjects were administered psychological and memory tests and perceptual learning tasks with and without cueing in various modalities.

Duration: July 1976-July 1978.

Cooperating group(s): West Midlands Regional Health Authority.

40-JE-3 PROJECT S.A.V.E.: SORTING AUTISM VARIABLES IN EDUCATION

Investigator(s): Ann Dell Duncan, Ph.D., Project Director; David Freschi, M.A.; and Linda Haine, B.A., Project Coordinator, Project S.A.V.E., Spaulding Youth Center, P.O. Box 189, Tilton, New Hampshire 03276; and Harold Kunzelman, Ph.D.; and Carl Koenig, Ph.D., International Management Systems, Kansas City, Missouri.

Purpose: To provide an intense program of diagnosis, education, and therapy for autistic and language impaired children, ages 3 to 8.

Subjects: Seven boys in a residential program, ages 6 to 12; and three boys and two girls in a day program, ages 4 to 8. All children are autistic, are language delayed, exhibit behavior disorders, or demonstrate a combination of these disabilities.

Methods: Year 1: Fifty-four pinpoints per child. Ten days' data of 1-minute frequencies. Year 2: Thirty-six pinpoints per child. Ten days' data of 1-minute frequencies, and then instituting curricular intervention in high and low channels, and measuring differences in learning relevant to channels and curriculum use.

Findings: Year 1: Discovered interchild patterns reflecting sensitivity within sensory channels. Year 2: Frequency measures are being run.

Duration: September 1976-August 1979.

Cooperating group(s): (1) Bureau of Education for the Handicapped; Office of Education; Education Division; U.S. Department of Health, Education, and Welfare. (2) New Hampshire Office of Special Education.

Publications: Information is available from the investigators.

40-JF-1 COPING BEHAVIOR IN SCHIZOPHRENIA: FAMILIES OF DISTURBED ADOLESCENTS

Investigator(s): Michael J. Goldstein, Ph.D., Professor; Kathryn L. West, Ph.D., Assistant Research Psychologist; and Sigrid McPherson, Ph.D., Adjunct Assistant Professor, Rodnick-Goldstein Family Project, Department of Psychology, University of California, Los Angeles, California 90024.

Purpose: To investigate attributes within the primary familial environment that may be relevant to the occurrence and pattern of development of adult psychopathology (particularly schizophrenia), allied conditions, and sociopathic disorders.

Subjects: 103 intact family units with disturbed adolescents, ages 13 to 18. Three subsamples consist of (1) 65 outpatients, (2) 21 inpatients, and (3) 17 adolescents receiving modified procedure treatment. There are 56 male and 47 female target adolescents.

Methods: An initial assessment consisted of six sessions including individual psychological tests, family inkblot tests, structured interviews, experimental interactions, actual interactions between family dyads and triads, videotape feedback, adjective ratings, etc. A follow-up assessment consisted of interviews with parents and interviews and testing with target adolescents. Data analyses include verbal and nonverbal coding of interactions, coding of communication styles and affect from test data, etc. Comparisons are made between families in which adolescent problems differ and in which parents differ in transactional styles. (See also *Research Relating to Children, Bulletin 31*, September 1972-February 1973, Study 31-LF-1, p. 107.)

Findings: Follow-up data on males (outpatient sample) show a relationship between clinically assessed outcome and initial assessment factors such as the nature of the adolescent problem and the degree to which parental communication resembles that of the parents of schizophrenics.

Duration: 1965-1982.

Cooperating group(s): (1) National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) Ventura County Mental Health Center. (3) University of California, Los Angeles, Neuropsychiatric Institute.

40-JI-1

A FOLLOW-UP STUDY OF A GROUP OF CHILDREN IN INSTITUTIONAL CARE

Investigator(s): Stephen N. Wolkind, M.D., M.R.C., Senior Lecturer in Psychiatry, London Hospital Medical College, Turner Street, London, England E.1; and George Renton, M.B., M.R.C.Psych., Consultant Psychiatrist, East London Child Guidance Clinic, London, England.

Purpose: To follow up, after 4 years, institutionalized children found to have psychiatric disorders, in order to determine the prognosis of the various clinical pictures seen; and to identify factors in the children's environment that might exacerbate or alleviate the disturbances.

Subjects: 53 boys and 39 girls, ages 9 to 16, at the time of the follow-up.

Methods: This study is based on a previous cross-sectional study that found a high rate of psychiatric disorder in a group of children, ages 5 to 12, who had been in residential care for at least 6 months. Rutter's Teachers and Parents Questions and Stott's Bristol Social Adjustment Guides are being used. Within-group comparisons will be made.

Findings: Data collection is completed and some information has been obtained on 95 percent of the children. Initial analysis shows a strong constancy in the original clinical pictures, with those children originally showing antisocial/conduct disorders showing little change. Children with antisocial disorders in the first stage were more likely to have had changes of caretakers during the follow-up period.

Duration: 1973-1978.

Publications: (1) The components of affectionless psychopathy in institutionalized children. *Journal of Child Psychology and Psychiatry*, 1974, 15, 215-220. (2) Sex differences in the aetiology of antisocial disorders in children in long-term residential care. *British Journal of Psychiatry*, 1974, 125, 125-130.

Juvenile Delinquency

40-KC-1

A STUDY OF COURT RELATED CHILDREN: AN ESTIMATE OF THEIR PLACEMENT AND REHABILITATIVE SERVICE NEEDS

Investigator(s): Louis Lieberman, Ph.D., Study Director, Welfare Research, Inc., 112 State Street, Albany, New York 12207.

Purpose: To determine the appropriateness of current placement and/or service delivery based on the service needs of adjudicated persons in need of supervision (PINS) and delinquents in New York State; to specify surplus and deficit in the current delivery system; and to project resources that will be needed 5 and 10 years hence.

Subjects: 1,100 cases of boys and girls under age 18, divided equally between New York City and upstate counties. The sample was drawn from all children adjudicated and in need of supervision or juvenile delinquent between 1/1/75 and 12/31/75.

Methods: Data were collected from case records compiled by county probation departments. Information concerning the child and the reason s/he was brought to court, the outcome of the court process, and his/her service needs were collected. The actual outcome of the case was compared to what the appropriate outcome would be according to predetermined criteria. Data concerning services offered to PINS and delinquents by various agencies were also collected on a standardized collection instrument. The service needs of the child were compared to the services offered by the agency in which the child was placed to determine whether the child's service needs were appropriately met. This information on individual cases was aggregated in the data analysis in order to provide a clear picture of the service needs of this population in New York City, in the upstate counties, and for the entire State of New York.

Duration: July 1976-completed.

Cooperating group(s): New York State Division of Criminal Justice Services.

40-KE-1

SPECIAL EDUCATION PROGRAM FOR ADJUDICATED AND NONADJUDICATED CHILDREN WITH LEARNING DISABILITIES

Investigator(s): Storm Carroll, M.A., Regional Education Director, Arrowhead Regional Community Corrections, 211 West 2nd Street, Duluth, Minnesota 55802; and Marlow Smaby, Ph.D.; and Gene Grossman, Ph.D., Department of Special Education, University of Minnesota, Duluth, Minnesota 55812.

Purpose: To study the relationship between learning disabilities and juvenile delinquency.

Subjects: 210 learning disabled juvenile delinquents, ages 10 to 18.

Methods: The research methodology included pre- and posttesting and follow-up; internal control group; multivariate data analysis (Cody and Wiley, 1971); and instruments including: the Slossen Intelligence Test, Peabody Picture Vocabulary Test, Wechsler Intelligence Scale for Children (WISC), WISC-R, Self-Esteem Scale, Faith in People Test, and Attitudes Toward Education Scale.

Duration: July 1976-June 1978.

Cooperating group(s): Bureau of Education for the Handicapped; Office of Education; Education Division; U.S. Department of Health, Education, and Welfare.

Public ion: Information is available from Arrowhead Regional Community Corrections.

40-KH-1**MINIMIZING AND PREVENTING ALCOHOL PROBLEMS OF CHILDREN AND YOUTH**

Investigator(s): Irving P. Babow, Ph.D., Professor, Social Sciences Department, California Polytechnic State University, San Luis Obispo, California 93407. Address correspondence to: Dr. Babow, 85 Circle Avenue, Mill Valley, California 94941.

Purpose: To investigate the present state of the art in this field; to review the literature dealing with epidemiological aspects; and to make recommendations for social policy.

Subjects: Populations at risk for alcohol problems, male and female, under age 25, with particular attention to the high risk group of males, ages 18 to 24.

Methods: This is primarily an analysis of the literature, including official reports by government agencies made chiefly for internal use.

Findings: Although young men and late adolescent boys are at high risk, more and more juvenile boys and girls are having alcohol problems, in many cases involving a switch from drug use or continuing alcohol/polydrug use.

Duration: June 1977-December 1978.

Publications: (1) A paper presented at the International Congress of Crisis Intervention and Suicide Prevention, Helsinki, June 1977: The violent career of a suicidal drinking-driving male youth. (2) A paper presented at the International Congress on Accident and Traffic Medicine, London, September 1975: Young drinking-drivers and traffic accidents.

40-KH-2**ADOLESCENT DRUG USE IN THREE FAMILY CONTEXTS**

Investigator(s): Bernice L. Rosman, Ph.D., Director, Research and Evaluation, Philadelphia Child Guidance Clinic, 34th Street and Civic Center Boulevard, Philadelphia, Pennsylvania 19104.

Purpose: To test the relationship between drug abuse and problems in adolescents and their family characteristics.

Subjects: 45 adolescents, ages 12 to 17, with drug related problems: 15 youngsters who overdosed with suicidal ideation; 15 delinquents for whom drug use is one of a number of behavior problems; and 15 who are habituated users of amphetamines or barbiturates, or are paint and glue sniffers.

Methods: Two hypotheses are being tested: (1) three specific patterns of drug use and abuse in adolescents emerge in three different family contexts, and (2) self- and parental concepts of the drug using youngsters are related to the different family patterns. Family characteristics and organization are assessed using interactional measures. Parent and self-concepts are measured using questionnaires. The three groups are being compared on the measures prior to receiving family therapy to test the hypotheses relating family characteristics to pattern of drug use. Pre- and postfamily therapy assessments will be compared to evaluate the relationship between changes in family organization and changes in symptom behavior, home and school adjustment, and self- and parental concepts.

Duration: May 1977-April 1980.

Cooperating group(s): National Institute on Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

Corrections

40-KP-1**DETERMINATION OF ADULT TRIAL CERTIFICATION**

Investigator(s): J. Ray Hays, Ph.D., Research Specialist; and Kenneth S. Solway, Ph.D., Clinical Psychologist, Texas Research Institute of Mental Sciences, 1300 Moursund, Houston, Texas 77030.

Purpose: To identify differential characteristics that may determine whether or not an adolescent is certified for trial as an adult.

Subjects: Adolescent males and females, ages 12 to 17, who are in the juvenile justice system.

Methods: The data are collected from psychological tests administered to the adolescents during required testing sessions. A control group is composed of those juveniles committing certifiable offenses but against whom petitions for certification were not filed. Instruments used in the testing sessions include: Interpersonal Checklist, Minnesota Multiphasic Personality Inventory, Wechsler Intelligence Scale for Children (WISC), WISC-R, or Wechsler Adult Intelligence Scale (WAIS), Draw-a-Person Test, Rorschach Inkblot Test, and the Thematic Apperception Test. Analysis of variance and chi-square statistics are used in the data analysis.

Duration: December 1976-continuing.

Cooperating group(s): Harris County Juvenile Probation Department.

40-KR-1

DELINQUENCY PROJECT

Investigator(s): Gerald R. Patterson, Ph.D.; and John B. Reid, Ph.D., Principal Investigators, Oregon Research Institute, 1009 Patterson Street, Box 3196, Eugene, Oregon 97403.

Purpose: To devise a three-phase systematic treatment program for delinquent males in order (1) to train parents to control their child's behavior, (2) to remediate the child's basic academic deficits, and (3) to provide work skills training and/or find employment for the child.

Subjects: First year of project: Boys, age 12, with three court contacts, one of which was for a Class I crime. Families of the subjects are included in the study.

Methods: A social learning approach is used, including treatment and alternate (i.e., usual community) treatment groups. Single subject and group data analyses are employed.

Duration: June 1974-May 1978.

Cooperating group(s): Division of Crime and Delinquency; National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

THE CHILD IN THE FAMILY

Family Relations

40-LA-1 THE ROOTS OF PARENTAL INFLUENCE

Investigator(s): Thomas Ewin Smith, Ph.D., Associate Professor, Department of Sociology, University of South Carolina, Columbia, South Carolina 29208.

Purpose: To delineate conditions that facilitate or impede parental influence on adolescents.

Subjects: 376 early and middle adolescents and one or both of their parents.

Methods: Adolescent data were gathered by self-administered questionnaires. Parent data were gathered in interviews. Data were analyzed with multiple regression path analysis techniques to test a theoretical model of the parental influence process.

Findings: By far the strongest interpersonal effect on parental influence appears to be the accuracy of the adolescent's perceptions of the parents' wishes for him/her.

Duration: September 1971-August 1978.

Cooperating group(s): National Science Foundation, Sociology Program.

40-LA-2 LONGITUDINAL STUDY OF PHYSICAL AND INTELLECTUAL GROWTH AND FAMILY INTERACTION IN EARLY ADOLESCENCE

Investigator(s): Laurence D. Steinberg, Ph.D., Assistant Professor, Program in Social Ecology, University of California, Irvine, California 92717.

Purpose: To determine whether and how family relations during adolescence differ from relations prior to this period; and, if so, whether transformations in relations are related to physical and intellectual maturation in the adolescent.

Subjects: 27 triads of middle class early adolescent boys, ages 11 to 14; and their parents.

Methods: There were three observational points over 1 year consisting of home visits in which structured interaction methodology was used to generate family interaction. Boys were rated on physical and intellectual growth (scales available). Taped interactions were coded and comparisons made between changes in interaction patterns of families with boys who did and did not mature physically and/or intellectually.

Findings: Transformations in the family system were found to be related to the adolescent's physical development and not to his age or intellectual growth. Major changes in the family appear to involve the adolescent and his mother.

Duration: September 1975-completed.

Cooperating group(s): Cornell University, N.Y.S. College of Human Ecology.

Publications: Information is available from the investigator.

40-LA-3 PARENTAL COMPATIBILITY

Investigator(s): Harold Feldman, Ph.D., Professor, Department of Human Development and Family Studies, Cornell University, Ithaca, New York 14850.

Purpose: To study the antecedents and consequences of parental compatibility.

Subjects: 50 couples having their first child.

Methods: The research consisted of a panel study with cross-sectional control. Couples were studied in midpregnancy and 6 months after the birth of their first child. The Childrearing Dilemmas Test was developed.

Findings: Couples differ significantly on childrearing practices, values, and parental role.
Duration: Fall 1976-Fall 1979.

40-LA-4

VOICES FROM AUSTRALIAN FAMILIES

Investigator(s): Ailsa M. Burns, Ph.D., Lecturer; and R. Homel, M.Sc., Lecturer, School of Behavioral Sciences, Macquarie University, North Ryde, New South Wales 2113, Australia.

Purpose: To measure the aspirations, values, and experienced quality of life of Australian families in different parts of New South Wales; to develop a series of subjective social-psychological indicators of the well-being of children and their families; and to examine the extent of agreement between these social-psychological indicators as reported in interviews and economic and socio-structural indicators of community well-being.

Subjects: 600 children, ages 9 to 11: 200 children each from high, low, and medium risk areas as determined by sociostructural indicators; and their parents.

Methods: High, medium, and low risk areas were selected based on the work of T. Vinson and R. Homel on the development of sociostructural indicators for Australian cities. The sample is a stratified cluster sample of dwellings. Questions for children include general life satisfactions and difficulties, attitudes toward school, fears and hopes, self-reported delinquency, etc. Questions for parents include long-term goals for their child, locus of control and self-esteem, valuation of family life, and education for their children, etc. Major statistical techniques will include multiple discriminant and regression analyses, especially in studying the relationship between objective and subjective indicators.

Duration: June 1977-December 1979.

Cooperating group(s): Macquarie University research grant.

40-LA-5

TRANSITION TO PARENTHOOD: THE ROLE OF ANTICIPATORY SOCIALIZATION

Investigator(s): Judith A. Myers-Walls, M.S., Graduate Assistant; and Raymond T. Coward, Ph.D., Assistant Professor, Institute for Consumer and Family Sciences, Purdue University, Lafayette, Indiana 47907.

Purpose: To investigate the effects of direct experiences with infants, training in child care or child development, observation of mothering models, and knowledge about infants (i.e., anticipatory socialization) on maternal self-confidence immediately postpartum.

Subjects: 103 Caucasian women, ages 18 to 35, who had recently given birth to healthy babies. The women were married and living with their husbands and were neither rich nor poor. The babies weighed at least 6 lbs. and were the first, second, or third child.

Methods: Oral and written interviews were conducted in the hospital and included items concerning background and life situation factors; previous experience with infants; previous opportunities to observe other mothers; and items measuring the amount of training in childbirth, child care, or child development. Written instruments (original for this study) measured self-confidence in the ability to care for an infant and knowledge about infants and infant care. Statistical analyses included Pearson product-moment correlations, Kendall's tau nonparametric correlations, and stepwise and listwise multiple regression analyses.

Findings: Correlational analysis indicated a positive relationship between experience and self-confidence for the total sample and for first-time mothers. Multiparas did not score significantly higher than the primiparas on the self-confidence measure. A positive relationship between training and self-confidence was also found, but only for multiparous women. In this area, formal class training seemed to be most important, and again only for the multiparous group. There was a tendency, although not statistically significant, for training to be negatively correlated with self-confidence for primiparous women. Knowledge was significantly negatively correlated with self-confidence among primiparous women. However, the correlations were insignificant for both the

total sample and the multiparas. Observation of models appeared to be unrelated to self-confidence for any of the groups. A regression analysis of knowledge on training, direct experience, and observation of models led to the conclusion that training was the most important of the three variables in predicting knowledge, although the amount of variance collectively accounted for by the three variables was not large. A regression analysis of maternal self-confidence on training, direct experience, observation of models, and knowledge indicated that a different set of variables was important for each analyzed group. For the total sample, direct experience was most predictive. For primiparas, direct experience and training became the important variables, while in the analysis of multiparas, training emerged as the most effective predictor. Observation of models was least predictive in each case. The largest proportion of total variance predicted in any of these analyses was only 10.4 percent.

Duration: January 1977-December 1977.

Cooperating group(s): Home Hospital, Lafayette, Indiana.

Publications: Myers-Walls, J.A. Transition to parenthood: The role of anticipatory socialization. Master's thesis, Purdue University, 1977.

40-LA-8

USE OF COMMERCIAL TELEVISION IN PARENT-CHILD INTERACTION

Investigator(s): Frederick Williams, Ph.D., Dean, Annenberg School of Communications; and Margaret Smart, Ph.D., School for Early Childhood Education, University of Southern California, Los Angeles, California 90007.

Purpose: To test the effects of using television experiences as the topic of parent-child interactions.

Subjects: 15 black families (predominantly inner city), each with a child, ages 3 to 6.

Methods: The experimental group underwent a series of parent-child interactions using TV as a topic. One control group had only parent-child interaction with no TV topic. A second control group received no treatment.

Findings: Television experiences could easily be incorporated. Effects were modest but did show an increase in children's elaborated speech in the TV group.

Duration: September 1976-June 1977.

Publications: Progress reports have been submitted to ERIC.

40-LC-1

CHILDREN OF DIVORCE

Investigator(s): Margaret B. Galante, Ph.D.; and Liane Leighton, M.Sc., School Psychologists, Port Washington Schools, 16 Bellevue Avenue, Port Washington, New York 11050.

Purpose: To relieve children of divorced parents of feelings of abandonment, rejection, or guilt, so that they can function better at home and in school.

Subjects: 12 children in grades 3 to 6 whose parents are divorced.

Methods: Eight group counseling sessions were conducted. The sessions were structured to encourage the children's self-esteem. The methodology included pre- and postevaluations.

Duration: September 1977-February 1978.

Publications: Information is available from Ms. Leighton.

40-LC-2

FAMILY CONFIGURATION AND INTELLECTUAL DEVELOPMENT

Investigator(s): Robert B. Zajonc, Ph.D., Professor of Psychology, Research Center for Group Dynamics, University of Michigan, Ann Arbor, Michigan 48104.

Purpose: To develop and verify against data a model of intellectual development that considers as its main variables family factors such as family size, birth rank, and birth intervals.

Subjects: National intelligence and achievement test scores of children from the Netherlands, the United States, France, and Scotland. Children were ages 8 to 19 at the time of testing.

Methods: Data are analyzed by family size; birth order; country; sex; and national, regional, ethnic, and racial factors. Data on twin pairs in which both members survived are compared to data for the surviving member of pairs in which one member died before 4 weeks of age. It is hypothesized that, in general, variations in aggregate intelligence scores are closely associated with variations in patterns of family configuration.

Findings: The present form of the confluence model fits the existing data fairly well. It is sensitive to variations in family size, socioeconomic status, and the age of testing.

Duration: 1974-1980.

Cooperating group(s): (1) National Institute of Child Health and Human Development; National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) National Science Foundation.

Publications: (1) Markus, G.B. and Zajonc, R.B. Family configuration and intellectual development: A simulation. *Behavioral Science*, 1977, 22, 137-142. (2) Zajonc, R.B. Family configuration and intelligence. *Science*, 1976, 192, 227-236. (3) Zajonc, R.B. and Markus, G.B. Birth order and intellectual development. *Psychological Review*, 1975, 82, 74-88.

40-LF-1

NEONATAL FACTORS IN SERIOUS MENTAL DISORDER

Investigator(s): Arnold J. Sameroff, Ph.D., Professor; and Melvin Zax, Ph.D., Professor, Department of Psychology, University of Rochester, Rochester, New York 14627.

Purpose: To compare the neonatal condition and development of children born to women who have been diagnosed as schizophrenic, neurotically depressed, personality disordered, or normal.

Subjects: 337 children and their mothers.

Methods: Comparisons are made on measures of the mother and the infants between groups of schizophrenic, neurotically depressed, personality disordered, and normal women. Children were examined at birth and at 4, 12, and 30 months. Mothers were evaluated in the ninth month of pregnancy and again when the child was 30 months old. Mothers' measures include anxiety scale scores and an attitude to pregnancy measure. Infant measures focus on birth and delivery indices, Brazelton Neonatal Assessment Scale, Bayley Scales of Infant Development, as well as observations of mother-child interactions.

Findings: Offspring of schizophrenic women have significantly lower birthweights than other children, but this is more a function of the severity and chronicity of their mental illness than diagnosis. Children of depressives had lower APGAR scores and more fetal deaths. No differences were found in delivery complications.

Duration: 1969-1979.

Cooperating group(s): (1) National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) University of Rochester School of Medicine and Dentistry, Departments of Pediatrics, Obstetrics, and Psychiatry.

Publications: (1) Zax, Sameroff, and Babigian. *American Journal of Orthopsychiatry*, 1977, 47, 218-230. (2) Zax, Sameroff, and Farnum. *American Journal of Obstetrics and Gynecology*, 1975, 123, 185-190. (3) Sameroff and Zax. *American Journal of Orthopsychiatry*, 1973, 43, 744-754. (4) Sameroff and Zax. *Journal of Nervous and Mental Diseases*, 1973, 157, 191-199.

40-LF-2

CHILDREN OF ADDICTS

Investigator(s): Barbara J. Sowder, Ph.D., Vice President; and Marvin R. Burt, D.P.A., President, Burt Associates, Inc., Suite 820 E, 7315 Wisconsin Avenue, Bethesda, Maryland 20014.

Purpose: To survey addict parents and their children to determine developmental problems and service needs.

Subjects: Addict (Index) Group: 170 addict parents with 79 children, ages 3 to 7; and 126 children, ages 8 to 18. Comparison Group: 170 nonaddict parents with 83 children, ages 3 to 7; and 126 children, ages 8 to 18. The groups lived in the same neighborhoods in five urban sites.

Methods: Interviews were conducted with the parents and the 8- to 18-year-old children. The Robbie the Rabbit Picture Test was used with the 3- to 7-year-old siblings of the 8- to 18-year-old children. Three IQ tests, the Bender Gestalt, and Figure Drawings (DAP) were administered to the other 3- to 7-year olds. Teachers were surveyed by mail. Parental reports of abuse/neglect, mental health treatment, delinquency, and drug and alcohol treatment were validated in 1976 through community agencies. Data were subjected to chi-square, t-tests, factor analysis, and discriminant analysis, etc.

Findings: Children of addicts appear to be a group at risk for learning problems, socioemotional problems, disciplinary/delinquent behaviors, abuse/neglect, and medical problems.

Duration: June 1976-April 1978.

Cooperating group(s): (1) National Institute on Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) Opinion Research Corporation. (3) Applications Research Corporation.

Publications: Results will be published by the National Institute on Alcohol Abuse and Alcoholism in 1978.

40-LG-1

THE PSYCHOLOGICAL ADJUSTMENT OF SIBLINGS OF CHILDREN WITH CHRONIC ILLNESSES

Investigator(s): John V. Lavigne, Ph.D., Staff Psychologist, Children's Memorial Hospital, 2300 Children's Plaza, Chicago, Illinois 60614.

Purpose: To determine whether the siblings of children with chronic illnesses are at risk for psychopathology.

Subjects: Boys and girls, ages 3 to 13, who are the siblings of either healthy children, of children with leukemia, of children with congenital heart disease, or of plastic surgery patients.

Methods: With siblings of healthy children as a comparison group, and using an objective parent checklist rather than interview ratings, comparisons were made across three illness and handicap groups that differed in type and severity of illness.

Duration: March 1977-completed.

Cooperating group(s): Children's Memorial Hospital General Research Fund.

40-LG-2

THE REPLACEMENT CHILD: A SOCIOLOGICAL PERSPECTIVE

Investigator(s): Jerry J. Waxman, Ph.D., Assistant Professor; and Donald Green, Jr., M.A., Research Associate, Department of Sociology, University of South Alabama, Mobile, Alabama 36688.

Purpose: To explore parental and sibling replacement behavior in families who have lost children, and societal responses to such behavior.

Subjects: Parents of varying ages, social classes, and religions, who lost at least one child because of the Sudden Infant Death Syndrome, or acute or long-term illnesses, or accidents. At death, children were ages birth (stillbirth) to 18.

Methods: The parents answered a 120-item questionnaire consisting of 90 fixed response questions and 30 open-ended questions. The questionnaire covered all facets of replacement behavior including guilt, scapegoating, bereavement, adoption, procreation, marital problems, and sibling reactions.

Duration: April 1977-January 1978.

Cooperating group(s): (1) University of Alabama, Faculty Research Committee. (2) Mobile County, Alabama Board of Health, Department of Nursing.

Investigator(s): Coryl LaRue Jones, Ph.D., Research Social Science Analyst (Environmental Design), National Institute of Mental Health (NIMH), Mental Health Study Center, 2340 University Boulevard East, Adelphi, Maryland 20783.

Purpose: To identify effects of environmental stimulation and means of environmental design support to promote achievement of developmental tasks in infancy; to experiment with specific interventions (e.g., circadian rhythm in lighting intensive care units); and to field test model standards in infant care settings for potential implementation.

Subjects: Environmental variation study: Eight to 10 male and female hospitalized infants, ages 0 to 12 months; and the nursing staff of the intensive care unit. Model standards project: Direct care and administrative staff and visitors in five infant service programs (hospital and day care).

Methods: A review of the literature, existing practices, standards, and licensure applicable to infant care settings was made. Consultation, participant observations, experimentation, and parallel experimentation in collaborating institutions were conducted to acquire additional data. Hypothesized standards, site visit protocols, survey questionnaires, and a scaling system were developed. Two pilot and three site visits to infant day care and hospital settings were conducted with interdisciplinary teams to evaluate model standards as a means of evaluating infant environments and training staff to use sociophysical environments more effectively.

Findings: Existing standards do not consider the developmental needs of infants and children, nor do many medical procedures. Alternatives and environmental design interventions can be made. Environmental standards can be established to improve the quality of care for infants in terms of their developmental needs.

Duration: November 1976-August 1978.

Cooperating group(s): (1) University of Florida, Gainesville, J. Hillis Miller Health Center. (2) City University of New York. (3) University of California, Berkeley, College of Environmental Design.

Publications: Jones, C.L. A step towards developing standards on environments for infants. In S. Weidemann (Ed.), *Priorities for environmental design research*. Stroudsburg, Pennsylvania: Dowden, Hutchinson & Ross (in press).

Childrearing

Investigator(s): Joseph E. Illick, Ph.D., Professor, Department of History, San Francisco State University, 1600 Holloway, San Francisco, California 94132.

Purpose: To compare family size from generation to generation; and to gather attitudes on child-rearing procedures and children's expectations.

Subjects: Graduates of the Bethlehem High School, Class of 1952; and their children, ages 1 to 25.

Methods: Questionnaires were sent to 480 graduates of Bethlehem High School, Class of 1952. Taped interviews were also conducted with 60 members of the same class. The 200 returned questionnaires were coded and processed by computer. Questionnaires and interviews were designed to obtain information on the subjects' grandparents' and parents' attitudes toward their children. A small survey of the fourth generation (subjects' children) was also made.

Duration: January 1976-June 1978.

Cooperating group(s): American Philosophical Society.

40-MA-2**CHICHESTER MOTHER-INFANT STUDY**

Investigator(s): Harry McGurk, Ph.D., Senior Lecturer; and Nevenka Radovic, Research Fellow, Department of Psychology, University of Surrey, Guildford, Surrey, England.

Purpose: To investigate the effect of short-term, immediate postnatal separation on infant development, maternal attitudes toward the infant, and mother-infant interaction.

Subjects: 70 mother-infant pairs, predominantly middle class. Mothers are ages 18 to 40. Infants are male and female.

Methods: This is a short-term longitudinal study conducted from the infant's birth until s/he is 6 months old. There are three groups of mother-infant pairs: a low contact special care group, a high contact special care group, and a nonspecial care control group. Maternal attitudes are measured in interviews and by using neonatal perception inventories and a depression scale. Mother-infant interaction is videotaped during feeding and play situations. Time sampling procedures are used to record interaction in nonstructured situations. In addition, mothers keep a diary of contact with their infant. Infant development is measured using the Bayley Scales of Infant Development (mental development) and the Carey Infant Temperament Inventory.

Duration: October 1976-June 1979.

Cooperating group(s): (1) Department of Health and Social Security, United Kingdom. (2) St. Richard's Hospital, Chichester. (3) Southlands Hospital, Shoreham.

40-MB-1**FAMILY MEDIATION: UNPREDICTABLE REWARD SYSTEMS**

Investigator(s): Dorothy Tennov, Ph.D., Professor; and John W. Jacobson, M.S., Teaching Assistant, Department of Psychology, University of Bridgeport, Bridgeport, Connecticut 06602.

Purpose: To develop and implement token economy systems that promote generalization and maintenance of altered behavior.

Subjects: Approximately 200 girls and boys, ages 3 to 19; and their families. The children are equally divided by sex and socioeconomic level; approximately 5 percent have developmental delays or learning disabilities.

Methods: This is a descriptive study of the effects obtained using unpredictable reward systems instigated by student behavior assistants with volunteer families. Reports submitted by the students are analyzed using objective criteria and are rated using a 10-point equal interval scale.

Findings: Token economies have been established and have been carried to completion in 83/85 indigenous groups with some degree of success evidenced in 82 groups.

Duration: January 1973-continuing.

Publications: Tennov, D. and Jacobson, J.W. Maintenance and generalization through unpredictable reward in applied settings. *European Journal of Behavioral Analysis and Modification*, February/March, 1977.

40-MC-1**EVALUATION OF THE LOTHIAN EDUCATIONAL HOME VISITING PROJECT**

Investigator(s): John Raven, Project Leader; and Gail McCail, Scottish Council for Research in Education, 16 Moray Place, Edinburgh 3, Scotland.

Purpose: To provide a descriptive account of the Lothian Program, an educational home visitation project, in which mothers are encouraged to play a more active role in promoting the educational development of their children.

Subjects: Approximately 200 families, over a 3-year period, with one or more children, ages 2 to 3. Families are visited by one of six home visitors. Most of the families are from disadvantaged areas.

Methods: In the program, visitors (previously teachers) visited families for 1 hour a week for 9 months to encourage active parent participation to promote the children's educational develop-

ment. Objectives of the researchers are (1) to document changes in the home visiting project's conceptual framework as they become more familiar with the problems; and (2) to develop techniques required to document the varying impacts of the program on the mothers' values, attitudes, and behavior related to their children. Survey data were collected from the community in which the home visiting took place. Interest centered on the effect of the project on the schools and administrative authority and on any community spin off, such as adult participation in community development.

Findings: The mothers generally welcome the program as a means of alleviating their loneliness and as a source of ideas on how to entertain their children. The home visitors have developed a greater respect for the values and priorities of the parents.

Duration: Summer 1976-continuing.

Cooperating group(s): (1) Lothian Region. (2) Scottish Education Department.

40-MC-2

ADJUSTMENT TO PARENTHOOD

Investigator(s): Lois Pall Wandersman, Ph.D., Research Associate, DARCEE; and Abraham Wandersman, Ph.D., Faculty Member, Kennedy Center, George Peabody College for Teachers, P.O. Box 151, Nashville, Tennessee 37203.

Purpose: To develop a conceptual framework to study the adjustment to parenthood; to study longitudinally the changes and developments during the first year after the birth of a first baby; and to evaluate support groups for facilitating the adjustment to parenthood.

Subjects: Predominantly middle class, educated couples from prepared childbirth classes: A minimum of 30 couples in parenting groups; and a minimum of 30 motivated couples in a contrast group.

Methods: Family development support groups were created. A broad assessment of the parents was conducted through extensive questionnaires about 2 months postpartum, 6 weeks later, and about 8 months postpartum. The assessment included (1) self: moods, well-being; (2) marital: dyadic adjustment, positive and negative marital interaction, task allocation, sex role ideology; (3) parenting: parental sense of competence, childrearing attitudes, perception of baby, father participation; and (4) social network: social support.

Findings: Parents are generally positive about themselves and their functioning by the first administration, and they become more positive longitudinally. Parents not in parenting groups show a sharp decrease in enjoyment of parenting, while those in parenting groups maintain their valuing of child care. Husbands and wives show different patterns of relations.

Duration: January 1976-January 1978.

Publications: A final report of Stage I is available from the principal investigator for a fee.

40-MC-3

PARENT-CHILD HOME VISITATION PROGRAM

Investigator(s): Thomas Duncan, Ph.D., Coordinator; and Robert G. Smith, Ph.D., Administrative Assistant for Research and Evaluation, Parent-Child Home Visitation Program, Frederick County Board of Education, 115 East Church Street, Frederick, Maryland 21701.

Purpose: To reduce developmental delays in preschool children, ages 0 to 4; to encourage achievement motivation; to promote effective parenting techniques and parent-child interactions; and to foster development of the family system through interagency services.

Subjects: 190 children, ages 0 to 4; 100 mothers in parent education classes; and 100 parents using toy lending library services. Children include handicapped children, children of young mothers, children of single mothers, those with poor prenatal histories, children from economically disadvantaged homes, and children with social emotional problems. All of the children exhibit developmental lags in their physical, motor, language, social, and intellectual development.

Methods: Referrals for families in need come from the Rock Creek Diagnostic Center, schools, and other agencies concerned with the welfare of young children. Through home visitations,

parents are encouraged to provide experiences and home environments that help children reach their potential. Group preschool sessions for parents and children offer opportunities for parents to share ideas concerning parenting and offer children an opportunity to be with other children to learn from each other. Child developmental specialists and home visitors on the staff plan an individual educational program for each child based on his/her need. Activities are geared toward motor development, social development, language development, conceptual and cognitive development, sensory development, and building self-concept. Educational toy lending libraries for children, ages 1 through 5, are another aspect of the program. These libraries provide parents with opportunities to teach their children through the use of educational toys. A toy lending library is located in each public library in Frederick County and in the Bookmobile which operates in several locations in the county. Two other toy lending libraries are located at sites designed to serve a population which might not otherwise be served. Program effectiveness is assessed using pre- and posttests of the Koontz Child Development Scale, HOME Observation for Measurement of Environment, and Santa Clara Inventory of Developmental Tasks.

Findings: Present data indicate that 80 percent of the children gained 20 percent or more in fine motor, gross motor, social, language expressive, and language receptive areas. Results of HOME administration show growth in avoidance of restriction and punishment, organization of the environment, and maternal involvement with the child.

Duration: June 1975-continuing.

Cooperating group(s): (1) Office of Education; Education Division; U.S. Department of Health, Education, and Welfare. (2) Maryland State Department of Education. (3) Frederick County Board of Education.

SOCIOECONOMIC AND CULTURAL FACTORS

40-NA-1

NATIONAL SURVEY OF CHILDREN

Investigator(s): Nicholas Zill, Ph.D., Senior Staff Scientist, Foundation for Child Development, 345 East 46th Street, New York, New York 10017.

Purpose: To determine the effects of social changes in American life on children's perceptions, feelings, attitudes, and values; to compare the survey health findings with the results of the National Health Examination Survey of 1963-65; and to provide guidelines for programs and policies that affect children's lives.

Subjects: 2,259 children born between September 1964 and December 1969 and more than 1,700 of their parents. Subjects were chosen from all children of this age range living in the continental United States. The sample was designed to yield approximately 500 interviews with black children and 1,500 interviews with nonblacks. Within each racial group, several stages of selection were employed to insure that all children in this age group had an equal probability of being selected.

Methods: Interviews, structured to determine the general environment in which children live, were conducted with the eligible child and the parent who would be most capable of providing information about the child — usually the mother. If a selected family had three or more eligible children, two were selected at random to be interviewed. Children participated in interviews lasting more than a half hour. The children were asked to report feelings about their general lifestyle, self-perception, fear and violence, victimization experience, TV and fear, their families and home environments, punishment and reward, their neighborhoods and schools, and progress in school. They also expressed their feelings about being black, being a boy or a girl, and being an American. Other interview questions pertained to health status and mental health. The National Health Examination Survey in 1963-65 did not include questions about psychological or psychiatric care, so the present findings will be compared to the 1966-70 survey data on 12-year olds.

Duration: 1975-1978.

Cooperating group(s): Temple University, Institute for Survey Research.

Publications: (1) A summary of preliminary findings is available from the investigator. (2) A book on the survey results will be published by Doubleday in the fall of 1978.

40-NA-2

PERCEPTUAL DEVELOPMENT, MOTHER-CHILD SYNCHRONY, AND NUTRITIONAL STATUS OF YOUNG CARIBBEAN CHILDREN

Investigator(s): Gloria J. Powell, M.D., Assistant Professor IV and Director; and Rosslyn Gairnes, Ph.D., Associate Professor III, Child Outpatient Department, Neuropsychiatric Institute, University of California, 760 Westwood Plaza, Los Angeles, California 90024.

Purpose: To determine the influences of the sequence of perceptual development, mother-child teaching styles, and nutritional status on a child's acquisition of literacy skills and academic performance.

Subjects: 200 children in St. Kitts: half the children are age 4; half, age 8. Half of the subjects are well-nourished and from middle and upper classes; half are malnourished or undernourished.

Methods: Nutritional status was determined (1) by anthropometric measurement (height, weight, head and arm circumference, and skinfold thickness); and (2) from health histories which include detailed family history, developmental history of the child, and obstetrical history obtained from governmental hospital records. Blood samples were analyzed for a small portion of the subjects. Mother-child teaching style was tested for a randomly selected group of 8-year-old children. (There

was a low proportion of undernourished subjects in this sample.) An examiner interviewed the child's mother at home and watched her teach her child how to do an assigned task. Variables recorded included the amount of verbal vs. visual instruction, the amount of praise or scolding given, and the amount of time the mother spent on the task. Academic achievement was determined by math and reading scores on standardized tests and math and English grades. Mother-child teaching style and academic performance of 4-year olds will be assessed when they are 8 years old.

Findings: There was more verbal interaction between mothers and their children in middle and upper socioeconomic groups.

Duration: September 1976-continuing.

Cooperating group(s): Neuropsychiatric Institute Biomedical Research Support Grant.

40-NE-1

ATTITUDES TOWARD RECREATIONAL DEVELOPMENT IN AN APPALACHIAN COUNTY

Investigator(s): Arnold R. Alarson, Ph.D., Assistant Professor, Department of Landscape Architecture, University of Wisconsin, Madison, Wisconsin 53706; and Kenard E. Smith, Ph.D., Assistant Professor, Geography Department, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

Purpose: To assess the attitudes of young adults in Pocahontas County, West Virginia toward large-scale recreational development.

Subjects: 400 high school girls and boys, ages 14 to 18. The majority of the adolescents were from blue collar and farm backgrounds; a few were from professional families.

Methods: Questionnaires were administered during early stages of the recreational development and were followed up 15 months later. The questionnaire was given to students in the county's only high school. Comparisons were made of socioeconomic differences in attitudes toward development. The blue collar-farm majority was compared to a small white collar group. Cross-tabulations were used. Periodic updates are being made.

Findings: During the first stage, results generally confirmed national findings; i.e., students with white collar backgrounds and/or short-term ties to the area demonstrated the greatest opposition to growth and development. Fifteen months later, most opposition had ended, although students were unaware of trade-offs between economic development and loss of environmental quality.

Duration: February 1974-continuing.

Publications: (1) Adolescent impressions of rural development in an Appalachian county. In S. Weidemann, A. Forrester, and R. Brauer (Eds.), *Priorities for environmental design research*. Stroudsburg, Pennsylvania: Dowden, Hutchinson & Ross (in press). (2) Social and economic consideration in Appalachian recreational development: A West Virginia case study. In H.G. Adkins, S. Ewing, and C.E. Zimolzak (Eds.), *West Virginia and Appalachia: Selected readings*. Dubuque, Iowa: Kendall/Hunt Publishing Company, 1977. Pp. 114-122. (3) Growth vs. no-growth issues, with an American Appalachian perspective. *Tijdschrift voor Economische en Sociale Geografie*, January 1977, 68, 30-42.

40-NE-2

MIGRATION, URBANIZATION, AND VALUE CHANGE IN ADOLESCENTS AND THEIR PARENTS

Investigator(s): Michael D. Hills, Ph.D., Dip.Tch., Senior Lecturer, Department of Psychology, University of Waikato, Hamilton, New Zealand.

Purpose: To study migration, urbanization, and value change in adolescents and their parents.

Subjects: Approximately 800 subjects in three groups: adolescents, ages 15 to 16, and their parents in Fiji, Cook Islands, and Western Samoa; adolescents, ages 15 to 16, and their parents from Samoa and Cook Islands (immigrant groups in New Zealand); and a European control group. The adolescents are male and female and live in urban and rural areas.

Methods: A structured version of the Kluckhohn Value Orientation Scale was administered to the subjects. It had been translated into the subjects' native languages and was administered by tape

recorded oral interview. A measure of intergenerational disparity was found by comparing the child's reactions with those of his/her parents'. Detailed demographic data were also collected.

Findings: The results indicated that adolescents differ in some orientations but not in others. There is surprisingly little difference between Polynesian and European groups. Migration causes less change than does urbanization within the homeland. The disparity scale appears to be reliable.

Duration: 1976-1978.

Cooperating group(s): (1) New Zealand Council for Educational Research. (2) University of the South Pacific.

Publications: (1) The New Zealand data were published in a Master's of Social Science thesis: Lane, R.H. Polynesia and Europe meet. Hamilton, New Zealand: University of Waikato, 1976. (2) The Pacific data were published in three monographs by the New Zealand Council for Educational Research in 1978. (M.D. Mills is the senior author of the monographs.)

40-NF-1

THE SOCIALIZATION OF RACIAL ATTITUDES

Investigator(s): Bruce A. Campbell, Ph.D., Associate Professor, Institute for Behavioral Research, University of Georgia, 634 Graduate Studies Research Center, Athens, Georgia 30602.

Purpose: To trace the antecedents of three attitudes: (1) racial distance, (2) sympathy with black protest (affective), and (3) perception of discrimination (cognitive).

Subjects: 944 high school seniors from Atlanta, Georgia area high schools; up to five of their best friends; and their parents, teachers, and principals.

Methods: Schools were selected to reflect a range of racial ratios and socioeconomic levels. The entire senior class of each school was interviewed. Major statistical treatment was a multiple classification analysis.

Duration: Fall 1975-March 1978.

Cooperating group(s): (1) National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) National Institute of Education, U.S. Department of Health, Education, and Welfare.

Publications: Information is available from the investigator.

40-NF-2

RACIAL ATTITUDES AND RACIAL BALANCE IN PUBLIC SCHOOLS: A CASE STUDY OF LYNCHBURG, VIRGINIA

Investigator(s): J. Kenneth Morland, Ph.D., Professor and Chairman, Department of Anthropology/Sociology, Randolph-Macon Woman's College, Box 477, Lynchburg, Virginia 24503.

Purpose: To measure the results of 4 years of racial balance in public schools.

Subjects: A random sample of 157 public school children in kindergarten and grades 1 to 3; and a random sample of 160 public school students in grades 6, 8, 10, and 12.

Methods: The younger children were interviewed using a set of photographs of black and white Americans. A semantic differential and a social distance test were employed with the older pupils.

Findings: Results indicate greater racial self-acceptance and greater acceptance across racial lines by both black and white children.

Duration: May 1976-completed.

Cooperating group(s): National Institute of Education, U.S. Department of Health, Education, and Welfare.

40-NF-3

THE DEVELOPMENT OF RACIAL-ETHNIC AWARENESS IN CHINESE AND AMERICANS: A CROSS-CULTURAL STUDY

Investigator(s): J. Kenneth Morland, Ph.D., Professor and Chairman, Department of Anthropology/Sociology, Randolph-Macon Woman's College, Box 477, Lynchburg, Virginia 24503; and

Chien-hou Hwang, Ph.D., Professor, National Taiwan Normal University.

Purpose: To compare racial-ethnic identity of Chinese in Taiwan and Chinese in Hong Kong.

Subjects: 412 Chinese children, ages 3 to 6, in Taipei, Taiwan; and 221 university students in Taipei, Taiwan.

Methods: For the younger children, a picture interview set was used to find racial-ethnic preference and identification. For the university students, social distance and semantic differential tests were used.

Findings: Taiwan subjects showed significantly less concern for racial-ethnic differentiation than was true in Hong Kong.

Duration: July 1975-completed.

Cooperating group(s): (1) National Science Foundation, US-Republic of China Cooperative Science Program. (2) Republic of China, National Science Council.

Publications: A final report has been submitted to the National Science Foundation: Grant No. OIP75-01184.

40-NG-1 RESPONSIBILITY AND NURTURANCE: AN AUSTRIAN EXAMPLE

Investigator(s): John J. Honigsmann, Ph.D., Professor, Department of Anthropology, University of North Carolina, Chapel Hill, North Carolina 27514.

Purpose: To study responsibility and nurturance in Austrian village families.

Subjects: An opportunistic sample of Austrian village families.

Methods: This research is part of an ongoing ethnographic study of an Austrian village. Standard ethnographic methods are employed.

Findings: The results to date bear out the relationship between nurturance and responsibility discovered by John and Beatrice Whiting (*Children of Six Cultures*, 1975). Responsibility (personal accountability for one's actions and whatever is in one's charge) combines with nurturance to provide care for persons, animals, and things.

Duration: 1960-continuing.

40-NG-2 COOPERATION AND GENEROSITY AMONG POLYNESIAN CHILDREN

Investigator(s): David R. Thomas, Ph.D., Senior Lecturer, Department of Psychology, University of Waikato, Hamilton, New Zealand.

Purpose: To examine urban-rural differences in cooperation-competition and generosity-rivalry among children in the Cook Islands, Fiji, and Western Samoa.

Subjects: 48 rural and 48 urban children each from Fiji, Western Samoa, and the Cook Islands, ages 11 to 14, in grades 7 and 8.

Methods: Two measurement techniques, the Madsen Cooperation Board and a modified version of the Kagan and Madsen measure of rivalry, were administered to all the children. Results were analyzed using analysis of variance and chi-square.

Findings: Significant urban-rural differences were obtained only for the Samoan sample, in which the rural sample was more generous. The Samoan and Fiji samples were more cooperative than the Cook Islands samples.

Duration: January 1977-completed.

40-NG-3 STRATHCLYDE EXPERIMENT IN EDUCATION: GOVAN PROJECT

Investigator(s): J. Eric Wilkinson, M.Ed., Lecturer and Director; and Sister Doreen Grant, M.Ed., Project Coordinator, Department of Education, University of Glasgow, 1, Lilybank Gardens, Glasgow, Scotland.

Purpose: To offset the harmful educational effects of a socially disadvantaged home background.
Subjects: 2,000 tenants (parents, children, and others) living in a Glasgow community known until recently as "Wine Alley."
Methods: By re-educating the local people and the professionals serving the community, the investigators are attempting to bring together disassociated socialization systems. The emphasis is on the promotion of literacy through small group interaction with a field work team.
Findings: Mothers can and will accept more responsibility for their children's education.
Duration: August 1976-July 1979.
Cooperating group(s): Local colleges.
Publications: An interim report is available from the investigators.

40-NG-4

SOCIALIZATION AMONG THE SANEMA INDIANS OF SOUTH CENTRAL VENEZUELA

Investigator(s): Gregory P. Stone, Ph.D., Professor, Department of Sociology, 1114 Social Sciences Building, University of Minnesota, 267 - 19th Avenue South, Minneapolis, Minnesota 55455; Gladys I. Stone, Ph.D., Associate Professor, Department of Sociology, University of Wisconsin, River Falls, Wisconsin 54022; and Marie Villalon, Graduate Student, Department of Anthropology, University of California, Berkeley, California 94720.
Purpose: To test, cross-culturally, the symbolic interaction perspective of socialization.
Subjects: 70 to 80 residents of an isolated Indian village in South Central Venezuela.
Methods: The research methodology includes participant observation; systematic observation, daily logs, photography (still and motion), and tape recording.
Findings: The importance given to play in the socialization of the child was assessed as having cross-cultural validity. The significance of the game has reached several theoretical problems concerning the relation between games and ritual.
Duration: July 1969-continuing.
Cooperating group(s): (1) University of Minnesota, Quigley Center, International Studies.
(2) University of Minnesota, College of Liberal Arts.
Publications: Stone, G.P. and Stone, G.I. Ritual as game: Playing to become a Sanema. *Quest*, Summer 1976, Monograph 26, Pp. 28-47.

EDUCATIONAL FACTORS AND SERVICES

General Education

40-OA-1 SMALL GROUP TEACHING PROJECT

Investigator(s): Shlomo Sharan, Ph.D., Senior Lecturer, School of Education, Tel-Aviv University, Tel-Aviv, Israel; and Rachel Herz-Lazarowitz, Ph.D., Lecturer, Haifa University, Haifa, Israel.

Purpose: To assess the social-psychological effects of small group teaching on teachers and pupils.

Subjects: Experimental group: 750 children, grades 4 to 8; and 45 teachers from three schools. Control group: 550 children and 22 teachers from two schools.

Methods: Teachers participated in biweekly workshops for 1½ years. They gradually began to apply small group techniques in classroom teaching. Techniques included pupil planning and implementation of group projects.

Duration: November 1975-completed.

Cooperating group(s): (1) Israel Instructional Television Center. (2) Israel Ministry of Education.

40-OA-2 SCHOOLS' COUNCIL CURRICULUM RESEARCH AND DEVELOPMENT PROJECT IN THE STRUCTURING OF PLAY IN THE INFANT/FIRST SCHOOL

Investigator(s): K.E. Manning, B.A., Co-Director; A. Sharp, B.A., Co-Director; A. Baker, M.A., Project Officer; and A.P. Ternouth, Ad.Dip.Ed., Project Officer/Evaluator, Project on the Structuring of Play in Infant/First School, Schools' Council, 160 Great Portland Street, London, England W1N 6LL.

Purpose: To involve teachers in action research in the development of learning through play; to produce guidelines and videotapes for teachers on how to structure play emphasizing the adult's role; and to produce resources to be used by teachers' centers and others involved with inservice training.

Subjects: 602 volunteer teachers (52 percent under age 40, 48 percent over age 40; 98 percent female) who teach 5- and 8-year olds.

Methods: During the pilot phase of the project, the teachers observed and recorded play in their classrooms and analyzed learning and development on recording sheets developed by teachers. In the second stage on the project, the recordings and analyses formed the basis for videotapes and guidelines on structuring play, which were used and analyzed by the teachers.

Duration: September 1974-August 1978.

Publications: (1) A workshop leaders' handbook on structuring play (to be published in 1978). (2) *Structuring play in the early years at school*. Ward Lock International, 1977. (3) Six videotapes and videotape notes published by Drake Educational, 1977: (a) Structuring Play. (b) Domestic Play. (c) Construction Play. (d) Make Believe Play. (e) Play with Natural Materials. (f) Play Outdoors. (4) *Dialogue*, Spring 1977. (5) *Child Education*, December 1974, April 1975, October 1975, February 1977. (6) *Child Education Quarterly*, Autumn 1976.

40-OA-3 OPEN PLAN SCHOOLS: A NATIONAL INQUIRY

Investigator(s): Neville Bennett, Ph.D., Research Director and Lecturer, Department of Educational Research, University of Lancaster, Lancaster, England.

Purpose: To examine the operation of British open plan schools, their problems and successes.

Subjects: 670 children, ages 6 and 9, who attend one of 23 open plan schools chosen on the basis of architectural design: 532 children were observed in situations stratified by ability and sex; 138, in situations stratified by ability, sex, and for school schedule.

Methods: A structured observation schedule was used to observe behavior in different types of schools. Analyses were undertaken to relate behavior to type of school design and teaching organization separately by ability, age, and sex. Analyses were also made of students' day schedule.

Duration: September 1975-September 1978.

Cooperating group(s): Schools' Council, London, England.

40-0A-4

EVALUATION OF THE NEW YORK STATE EXPERIMENTAL PREKINDERGARTEN PROGRAM

Investigator(s): David J. Irvine, Ph.D., Coordinator; and Thomas L. Hick; Mary D. Horan; and David L. Flint, Researchers, Prekindergarten Evaluation Unit, Division of Research, New York State Education Department, Room 562 EBA, Albany, New York 12234.

Purpose: To assess the effect of the Experimental Prekindergarten Program on the cognitive and noncognitive development of children while they are in the program and as they progress through the third grade; and to identify program factors which contribute to the immediate and long-range development of children.

Subjects: Approximately 2,000 children. Each year the program enrolls approximately 5,000 four-year-old children in 52 districts. The two sexes are about equally represented. The major racial and cultural groups represented are Black (42 percent), Caucasian (42 percent), and Puerto Rican-Spanish (13 percent). Approximately one-fourth of the children live in New York City; one-third, in the surrounding area. English is the primary language of 82 percent; Spanish, 14 percent. The average family income is approximately \$7,000. The majority of parents have occupations classified as clerical, sales, service, semi-skilled, unskilled, or homemaker.

Methods: Data are collected on all 4-year-old children in the fall of their prekindergarten year. Subjects are posttested in the spring of the prekindergarten year, pre- and posttested in kindergarten, and tested in the spring of each grade, 1 through 3. The first wave entered prekindergarten in the fall of 1975. One or more additional waves will be studied. A small control group for each wave is made up of children in prekindergarten districts who were eligible for the program but for various reasons were not enrolled. A larger control group, to be used in assessing the children's progress at the kindergarten level and beyond, is made up of similar children without prekindergarten experience. This control group is first tested at the kindergarten level. The children's development is measured using five instruments: (1) Walker Readiness Test for Disadvantaged Children, (2) Cooperative Preschool Inventory, (3) Peabody Picture Vocabulary Test, (4) Classroom Behavior Inventory, and (5) California Preschool Social Competency Scale. Additional data are collected on children's families, attendance, parents' involvement in the school program, and noninstructional services. Data for 1975-76 on the first three measures were analyzed using analyses of covariance. Criteria were total posttest scores on the five measures. Covariates included child's age, mother's education, months between pre- and posttest, family income, and pretest score on the criterion measure.

Findings: On the Walker and the Cooperative, the prekindergarten children scored significantly higher than the control group children. With one exception, the prekindergarten effect was found to be the same at all levels of the covariates. On the Walker, a significant interaction was found between the prekindergarten treatment and mother's education, which indicated that the effect of the prekindergarten program was greater for children whose mothers had less education. No significant differences were found between the prekindergarten group and the control group on the Peabody. A significant interaction was found between the prekindergarten treatment and months between pre- and posttest. Among children who had only 4 months between testing, the control group performed better than the prekindergarten group. Among children who had 6 months between testing, the reverse was found.

Duration: June 1975-March 1981.

Cooperating group(s): New York State Education Department, Bureau of Child Development and Parent Education.

Publications: (1) Preliminary report of findings: Evaluation of the New York State Experimental Prekindergarten Program. Unpublished paper. Albany, New York: Prekindergarten Evaluation Unit, New York State Education Department, June 1977. (2) Hick, T.L.; Kukuk, S.E.; Horan, M.D.; and Irvine, D.J. Effects of prekindergarten on three measures of cognitive development. Unpublished paper. Albany, New York: Prekindergarten Evaluation Unit, New York State Education Department, May 1977. (3) Irvine, D.J.; Hick, T.L.; and Horan, M.D. Hypothesis testing in evaluating a prekindergarten program: Illustrative procedures. Unpublished paper. Albany, New York: Prekindergarten Evaluation Unit, New York State Education Department, July 1976. (4) A plan for evaluating the New York State Experimental Prekindergarten Programs under Chapter 46 of the Laws of 1966. Unpublished paper. Albany, New York: Bureau of Child Development and Parent Education and Bureau of School Programs Evaluation, New York State Education Department, January 1975.

40-OA-5

ETHNOGRAPHIC STUDIES OF RESOURCE TEACHER UTILIZATION IN THE ELEMENTARY SCHOOL

Investigator(s): B.H. Watts, Professor of Special Education and Director; and M.B. Henry, Fred and Eleanor Schonell Educational Research Centre, University of Queensland, St. Lucia, Brisbane, Queensland, Australia 4067.

Purpose: To undertake a close study of resource teacher/regular teacher interactions; to determine existing arrangements that foster such interactions; and to offer advice on future teacher education programs.

Subjects: Resource teachers and classroom teachers in four elementary schools.

Methods: The research methodology included ethnographic studies and interviews on role perception and constraints or role implementation.

Duration: January 1977-June 1978.

Cooperating group(s): Education Research and Development Committee, Canberra, Australia.

40-OA-6

TEACHERS AS LEARNERS IN THE OPEN CLASSROOM

Investigator(s): Elizabeth Jones, Ph.D., Coordinator of Graduate Studies; and Doris Smith, M.A.; Janet Wood, M.A.; Carole Herman, M.A.; Ann Rubendall, M.A.; Molly Scudder, M.A.; Christina Carney, M.A.; Louise Derman-Sparks, M.A.; Bunny Rabirot, M.A.; and Elizabeth Prescott, M.A.; Pacific Oaks College Faculty Members, Pacific Oaks College, 5 Westmoreland Place, Pasadena, California 91103.

Purpose: To document and communicate the dynamics of the teaching/learning process in open classrooms for young children.

Subjects: Approximately 200 children, ages 3 through 8, enrolled in Pacific Oaks Children's School.

Methods: This is a collection of participant-observation, naturalistic-observation, and description-of-process studies conducted, for the most part, by working teachers.

Duration: 1971-1978.

Publications: Jones, Elizabeth (Ed.) *Joys and risks of the open classroom as experienced in nursery/kindergarten/primary programs at Pacific Oaks*. Pasadena, California: Pacific Oaks College, Spring 1978.

SURVEY OF LINGUISTIC DIVERSITY IN INNER LONDON SCHOOLS

Investigator(s): Harold Rosen, Ph.D., Professor and Head, English Department; and A. Burgess, M.A., Research Officer, Institute of Education, University of London, Bedford Way, London WC1H 0AL, England.

Purpose: To supply hitherto unavailable data on an educational population of known great linguistic diversity, in order to help in educational planning at all levels.

Subjects: Approximately 6,000 girls and boys, ages 11 to 12, who represent 20 percent of the first year pupils in the secondary schools of the Inner London Education Authority.

Methods: Questionnaires were distributed to the subjects. The questionnaires were supported by explanatory documents and briefing and assistance by members of the research team. An in-depth study was conducted in two schools to demonstrate the complexities underlying the data.

Duration: October 1977-April 1978.

Cooperating group(s): H.M. Government, Department of Education and Science.

Publications: A report will be available in late 1978.

A LONGITUDINAL STUDY OF EARLY CHILDHOOD PROGRAM EFFECTS IN PHILADELPHIA

Investigator(s): Michael H. Kean, Ph.D., Executive Director; Irvin J. Farber, Ed.D., Assistant Director, Priority Operations and Evaluation Services; Thomas C. McNamara, Ed.D., Manager; and Kenneth W. Prusso, Ed.D.; and Judith Goodwin, M.A., Research Associates, Early Childhood Evaluation, Office of Research and Evaluation, School District of Philadelphia, Room 403, Administration Building, 21st and the Parkway, Philadelphia, Pennsylvania 19103.

Purpose: To investigate the effects of (1) type of prekindergarten experience; (2) length and type of Follow Through experience in grades kindergarten through 3; and (3) yearly absence rates on school performance in grades kindergarten through 12 as measured by city-wide standardized tests.

Subjects: The initial Follow Through cohort which entered kindergarten in Philadelphia in 1968-69 is expected to be tracked through grade 12 in 1980-81. Each succeeding cohort will be tracked through one lower grade respectively during the same time. Approximately 6,000 lower income children (ages 4.7 to 5.7, in kindergarten, approximately equally divided by sex) constitute each of the main cohorts being tracked. Some approximately equal comparison cohorts were identified and introduced in grades kindergarten through 3 in 1973-74. A total of approximately 40,000 children were involved in the research through 1975-76.

Methods: The research design used is essentially a combination of descriptive statistical comparisons in a parameter context; i.e., the long-term tracking of the total Follow Through population in Philadelphia. The comparisons are geared to the following reference groups: (1) national norms group, (2) total subdistrict and total city performance, and (3) the comparison group paralleling the large national Follow Through evaluation sample in Philadelphia, which is roughly equivalent in numbers to the total Follow Through group. Test data are derived from the yearly (mid-year) administrations of the city wide test battery which presently consists of the Stanford Early School Achievement Test in kindergarten and the California Achievement Test in grades 1 through 12. Prekindergarten and Follow Through experience data, as well as yearly absence data, are collected from existing school district records. F.B. Davis's statistics, which focus on psychometrically significant differences in a parameter context, are considered more appropriate to the design than the usual inferential statistics whose primary concern is sampling error. Multiple regression is also a key form of analysis.

Findings: One of the major findings to date is that prior Head Start or equivalent experience coupled with consistent Follow Through exposure during the kindergarten through grade 3 years and low yearly absence rates are associated with higher performance in the postprogram (up to grade 6) years than that achieved by the total city and most subdistricts.

Duration: 1972-1982.

Publications: Official reports are available from the Office of Research and Evaluation, School District of Philadelphia.

40-OB-1

CAREER DEVELOPMENT POTENTIAL AND VALIDITY OF A COMPETENCY-BASED CREDENTIAL FOR CHILD CARE STAFF

Investigator(s): Willa Bowman Pettygrove, Ph.D., Assistant Professor; and Shirley C. Karas, M.S., Assistant Professor, Child Development, Iowa State University, 100 Richards, Ames, Iowa 50011.

Purpose: To investigate the content and criterion validity of the Child Development Associate (CDA) assessment; and to investigate the place of the CDA credential within career ladders for women professionals.

Subjects: 100 female child care workers who have the CDA credential; and a matched sample of female child care workers who do not.

Methods: Data on content validity will be drawn from a competence related test of knowledge. Criterion validity will be evaluated through comparisons of CDA assessment ratings with those of an independent rater. Career development analysis will be based on a questionnaire of personal and career development and a content analysis of competencies for related occupations. The model is short-term and longitudinal with a 1-year follow-up.

Duration: November 1977-October 1979.

Cooperating group(s): Career Preparation Division; National Institute of Education; U.S. Department of Health, Education, and Welfare.

40-OE-1

A COMPARISON OF PLAY AND SKILLS TUTORING IN NURSERY CLASSES

Investigator(s): P.K. Smith, Ph.D., Lecturer and Project Director; and M. Dalgleish, B.S., Senior Research Worker, Department of Psychology, University of Sheffield, Sheffield S10 2TN, England.

Purpose: To determine whether play tutoring has beneficial effects caused by increased levels of play rather than by tutoring experience *per se*.

Subjects: Four classes of 20 girls and boys, ages 3 and 4.

Methods: Two classes received play tutoring; two received skills tutoring. Each class was pre- and posttested on social, cognitive, and linguistic skills. A follow-up assessment was made one term later.

Duration: June 1977-September 1978.

Cooperating group(s): (1) Social Science Research Council, London. (2) Sheffield Local Education Authority.

40-OE-2

TWO-YEAR STUDY OF SCHOOL ATTITUDE AND READINESS IN FIRST GRADE

Investigator(s): Juanita B. Dickson, M.A., Assistant Professor; and Sara D. Taylor, Ed.S., Assistant Professor, Department of Education, Western Kentucky University, Bowling Green, Kentucky 42101.

Purpose: To study the relationship between children's attitudes toward reading and the level of readiness to read.

Subjects: First year sample: 45 first graders who had had a year of kindergarten experiences. Second year sample: 48 first graders who had had a year of kindergarten experiences.

Methods: The measurement instruments employed in the research included: the Metropolitan Readiness Test, Form P, Level II, 1976, by Joanne R. Nurss and Mary E. McGauvran to measure reading readiness; and the Survey of School Attitudes, 1975, by Thomas P. Hogan to measure student reactions to reading and other language arts. The correlation was computed using the total

raw score earned on the reading/language area of each instrument. The field based data were statistically computed by using the product-moment method of correlation.

Findings: The relationship between attitude toward reading and the level of readiness to read is low as measured by these instruments. The correlation was found to be .19 and .09 consecutively.

Duration: Fall 1976-Spring 1978.

Cooperating group(s): First grade, McNeill Elementary School, Bowling Green, Kentucky School System.

Publications: Information is available from the investigators.

40-OF-1

TEACHING AND LEARNING OF CHILDREN

Investigator(s): K.B. Start, Ph.D., Professor; and Hilary Schofield, M.Ed., Graduate Student, Department of Education, University of Melbourne, Parkville, Victoria, Australia 3052.

Purpose: To identify factors of achievement and attitudes of teachers that relate to the achievement and attitudes of primary school children.

Subjects: 2,500 girls and boys, ages 8 to 12, in grades 3 through 6; and their teachers, who were in the final year of initial teaching.

Methods: Teachers were administered achievement, attitude, and self-concept tests. Children were tested in reading and number (attitude and achievement), and in self-concept. Tests were administered to the children the first and last month of the school year. A subsample of 100 to 150 fourth graders also participated in a task study.

Findings: Teachers' achievement and attitude scores are unrelated in the area of reading but relate moderately in the area of number.

Duration: 1975-1978.

Cooperating group(s): Victoria State Department of Education.

40-OF-2

SOCIOCULTURAL INTEGRATION AND OTHER CHARACTERISTICS OF THE HUMAN ENVIRONMENT IN THE CLASSROOM AS RELATED TO ACHIEVEMENT IN GRADES 1 AND 2

Investigator(s): Sarah Smilansky, Ph.D., Senior Investigator; and Leah Shephatiah, Research Coordinator, Henrietta Szold Institute, 9 Columbia Street, Kirjat Menachem, Jerusalem, Israel 96583.

Purpose: To evaluate the relative effects of classroom environment, student environment, personal background, and teacher characteristics on achievement.

Subjects: 1,404 first grade children from 57 classes; and 966 second graders from 39 classes. Approximately two-thirds of the children were from disadvantaged backgrounds.

Methods: Personal background variables (ethnicity, father's education, and sex) were coded for each child along with information on the classroom student body (same variables as for single subjects and class size) and with teacher variables (years of experience and family burden). Data were analyzed for each grade level separately for grade, for ethnicity, education, and for sex subgroups using multiple and stepwise regression analyses and commonality analyses.

Findings: Although classroom composition was the strongest single predictor of reading comprehension at each grade level, the unique contribution of personal background was somewhat higher than that of student body characteristics. The contribution of teacher variables is negligible. Class size is negatively related to reading achievement in first grade, but not in second grade.

Duration: 1976-1977.

Cooperating group(s): Ford Foundation.

Publications: Research Report No. 202, Publication No. 565, Henrietta Szold Institute (in English).

Investigator(s): Irving Lazar, Ph.D., Chairman; and Virginia Ruth Hubbell, M.S.; Harry Murray, M.R.P.; Jane Pedersen; Marilyn Rosche; and Jacqueline Royce, Research Associates, Consortium on Developmental Continuity, Department on Community Service Education, College of Human Ecology, Cornell University, N 135 MVR Hall, Ithaca, New York 14853; and James Peterson, Education Commission of the States, 1860 Lincoln Street, Denver, Colorado 80203.

Purpose: To conduct longitudinal studies on the outcomes of early education programs; and to analyze secondarily the systematically pooled original and current follow-up data from the longitudinal early childhood intervention programs in a heuristic investigation of main effects and of interaction effects of various types of interventions; the age, duration, and intensity of the intervention; and the structure and demographic characteristics of the child's family on the child's cognitive and academic development.

Subjects: Approximately 2,000 low income children involved in 10 original early intervention programs. At the beginning of these various programs, the children ranged in age from 3 months to 6 years. At the present follow-up period, they range from ages 9 to 18. Approximately 88 percent of the children are black; 60 percent, males. The children live in different areas of the country including the New York City metropolitan area, five other urban areas, and two rural areas.

Methods: The Consortium on Developmental Continuity is a collaborative effort of 12 research groups (see Cooperating group(s) below). The educational experiments, in which subjects had participated in the 1960s, were (1) homebased, parent education-infant programs; (2) preschool center programs; and (3) combined preschool center and home visit programs. Data were collected independently by each research group at the beginning of their program and over a number of years after the program ended; common follow-up data were collected in 1976-77. Parent and youth interviews, Wechsler IQ scores, achievement test scores, and data from school records were collected in the current follow-up on program children and their control or comparison group.

Findings: The results analyzed to date show that investments in early education have long-term benefits in three areas: (1) Special education assignment. The combined evidence from project sites which collected this data shows that early education significantly reduced the number of program children assigned to special educational classes. (2) In-grade retention. The combined evidence from seven project sites able to collect this information indicates that early education significantly reduced the number of children held back one or more grades. (3) Cognitive measures. The children from all three types of programs surpassed their controls for up to 3 years after the end of the program on the Stanford-Binet. This significant difference appears to last through the primary grades. Current Wechsler results show only the youngest program subjects with IQ scores significantly higher than their controls' scores. Attrition analyses indicate that, overall, there were no significant differences between the early demographic and cognitive characteristics of those subjects found and those not found for follow-up study. Less than 3 percent of those contacted refused to participate in the follow-up study. The most important finding is that low income children who received early education are better able to meet the minimal requirements of their schools as shown in reduced rate of assignment to special education and in-grade retention. In addition, the preschool programs improve cognitive skills into the primary grades as measured by the Stanford-Binet. Parental satisfaction with programs was high as measured on the follow-up interviews. Preliminary analyses indicate significant differences in attitudinal responses, such as program children rating themselves better than others in their school work compared to their controls. The implications are that well-planned curricula for young children in day care and Head Start are likely to reduce later costly special education or remedial programs in schools.

Duration: 1967-completed.

Cooperating group(s): Researchers cooperating on the project include: Kuno Beller, Temple University; Ira Gordon, University of North Carolina, Chapel Hill; Martin and Cynthia Deutsch, New York University; Susan Gray, George Peabody College for Teachers; Merle Karnes, University of Illinois; Phyllis Levenstein, Verbal Interaction Project, Freeport, New York; Louise Miller, University of Louisville; Francis Palmer, State University of New York, Stony Brook; David Weikart,

High/Scope Foundation, Ypsilanti, Michigan; Myron Woolman, Institute for Educational Research, Washington, D.C.; and Edward Zigler, Yale University.

Publications: (1) Lazar, I. *et al.* *The persistence of preschool effects*. A report to the Administration of Children, Youth, and Families; Office of Human Development Services; U.S. Department of Health, Education, and Welfare. (2) Information is available from Dr. Lazar.

40-OF-4

INVULNERABLE BLACK STUDENTS

Investigator(s): Samuel L. Woodard, Ed.D., Professor, School of Education, Howard University, 2400 - 6th Street, N.W., Washington, D.C. 20050.

Purpose: To gather personality data on black junior high school students who achieve at a high level academically despite socioeconomic handicaps.

Subjects: 20 girls and 14 boys, ages 12 to 14.

Methods: A structured interview technique was used. Instruments used included the Self-Observation Scale, Script Matrix, and Stroke Profile-Transactional Analysis as a theoretical framework. Data were analyzed by calculating percentages.

Findings: Invulnerable black students are above the median on a self-observation scale in the following areas: school affiliation, teacher acceptance, self-assertiveness, and self-acceptance.

Duration: May 1976-completed.

Cooperating group(s): Washington, D.C. Public School System.

Publications: A book is in progress.

40-OF-5

EFFECTIVE TEACHING OF INNER CITY CHILDREN

Investigator(s): Richard J. Murnane, Ph.D., Assistant Professor, Department of Economics, University of Pennsylvania, Philadelphia, Pennsylvania 19104; and Consultant, Mathematica Policy Research, Princeton, New Jersey 08540.

Purpose: To identify the characteristics, attitudes, and classroom behaviors of teachers who significantly increase the achievement of black, inner city, disadvantaged children; to study the relationships among these teacher characteristics, attitudes, and behaviors; and to consider the causes of teacher mobility and its relationship to student achievement.

Subjects: Black children, ages 6 to 14, in grades 1 through 6 in a midwestern urban school district. (Number ranges from 115 to 207 depending on grade.) The sample is equally distributed between the sexes. Most of the children come from female-headed, low income families.

Methods: The study uses naturally occurring data. Longitudinal achievement test score data were collected on each child from school records. Home background information was collected with a parental questionnaire; teacher attribute information, with a teacher questionnaire. Multiple regression was used to estimate a model of achievement. The study employs the application of models and statistical methodology, derived from education production functions, to the study of classroom processes considered in the educational process-product literature.

Findings: The results confirm the effectiveness for disadvantaged children of the pattern of instruction which Rosenshine labels "direct instruction." For example, teachers who are business-like, who ask children to repeat poorly done lessons, and who seldom use grouping are effective in increasing achievement.

Duration: October 1976-April 1978.

Cooperating group(s): National Institute of Education; U.S. Department of Health, Education, and Welfare.

40-OG-1**THE SEX OF THE NURSERY TEACHER IN RELATION TO CHILDREN'S GENDER AND COGNITIVE DEVELOPMENT**

Investigator(s): Dolores Gold, Ph.D., Associate Professor, Department of Psychology, Sir George Williams Faculty of Arts, Concordia University, 1455 de Maisonneuv Boulevard, Montreal, Quebec, Canada.

Purpose: To determine any relationship between the sex of nursery school teachers and the gender and cognitive development of children.

Subjects: 55 boys and 54 girls, age 4, from 13 nursery classes taught by teams of either a male and female or two female teachers. All children were from the middle class.

Methods: A 2 x 2 factorial design was used in which sex of child and presence or absence of a male teacher were the independent variables. Pre- and postbatteries were given at the beginning of the school year and 4 months later to assess gender identity, math achievement, school enjoyment, self-confidence, and classroom behavior. Children's IQ scores were matched across groups.

Findings: When a male is part of the teaching team, boys improve more on math achievement, and both boys' and girls' behavior is rated more favorably by both male and female teachers.

Duration: September 1976-completed.

Cooperating group(s): Government of Quebec, Department of Education.

40-OG-2**THE ELEMENTARY SCHOOL ENVIRONMENT: PERCEPTIONS OF STUDENTS, TEACHERS, AND PARENTS**

Investigator(s): Robert W. Zellers, Ed.D., Associate Professor, Coordinator of Elementary Education, Division of Education, University of Pittsburgh, Johnstown, Pennsylvania 15904.

Purpose: To determine the existence of differences in the perceptions of students, teachers, and parents of the educational environment of elementary schools; and to compare differences of clinical vs. nonclinical schools.

Subjects: Children in grades 5 and 6 from nine elementary schools in Southwestern Pennsylvania; their teachers; and 20 percent of their parents. Four of the schools were clinical (associated with the Department of Elementary Education, University of Pittsburgh), and five were nonclinical.

Methods: The Elementary School Environment Survey (ESES), produced by Robert L. Sinclair, was administered to subjects. The instrument measured the educational environment of elementary schools across five variables: practicality, scholarship, community, awareness, and propriety. The two ESES forms were combined to produce an 80-item survey with 16 items per variable. The items were of the true and false type with variable scores derived by totaling the items which were answered in the keyed direction. Group means were then established by variable. Analyses of variance and other tests of significance were performed on student, teacher, and parent responses to determine if significant differences existed among and between groups. Clinical and nonclinical responses were also compared to determine significant differences. A .05 level of significance was used throughout the study. Forty null hypotheses were stated for statistical analysis. The first 20 hypotheses tested the significant differences of student, teacher, and parent perceptions by variable across all schools. The second 20 hypotheses tested the significant differences of student, teacher and parent perceptions by variable of clinical schools and student, teacher, and parent perceptions by variable of nonclinical schools.

Findings: Results indicate that the perceptions of students, teachers, and parents differ across the educational environment of elementary schools as measured by the ESES.

Duration: 1972-continuing.

Publications: A paper is available from the investigator: The elementary school environment: Perceptions of students, teachers, and parents.

40-OG-3**ETHNOGRAPHIC STUDIES OF MILDLY INTELLECTUALLY HANDICAPPED CHILDREN**

Investigator(s): B.H. Watts, Professor of Special Education and Director; and M.B. Henry, Fred and Eleanor Schonell Educational Research Centre, University of Queensland, St. Lucia, Brisbane, Queensland, Australia 4067.

Purpose: To ascertain levels of achievement, school behaviors, social acceptance, and self-image of mildly intellectually handicapped children in regular and special elementary classrooms; to record interactions between teachers and target pupils; and to ascertain peer perceptions of the pupils.

Subjects: Mildly intellectually handicapped pupils, ages 10 and 11, in four special schools and four regular schools.

Methods: Ethnographic observations were conducted and achievement tests were administered to the subjects.

Duration: January 1977-June 1978.

Cooperating group(s): Education Research and Development Committee, Canberra, Australia.

40-OG-4**TEACHING RESEARCH PROJECT**

Investigator(s): Graham A. Nuthall, Ph.D., Professor; and Phillipa Dobson, Research Assistant, Education Department, University of Canterbury, Private Bag, Christchurch, New Zealand.

Purpose: To identify relationships between teacher verbal behavior, pupil verbal behavior, pupil attitudes, interests, and achievement.

Subjects: Three studies have included intact classes of pupils: 280 children, age 8; 350 children, ages 10 to 11; and 320 children, ages 12 to 14.

Methods: In each of three studies, a selected group of teachers was asked to teach specified topics to their classes using their normal procedures. All teaching was observed, and verbal behavior was recorded and transcribed. Pupil interests, attitudes, and learning of specified topics were carefully measured. Data analysis involves complex correlational and pattern analysis techniques.

Duration: 1970-continuing.

Publications: Nuthall, G.A. Is classroom interaction analysis worth the effort involved? *New Zealand Journal of Educational Studies*, May 1974, 9, 1-17.

40-OH-1**THE EDUCATIONAL AND OCCUPATIONAL ASPIRATIONS OF PRIMARY SCHOOL MIGRANT AND NON-MIGRANT CHILDREN**

Investigator(s): Susan May Morrison, M.Ed., Senior Lecturer; Doreen A. Rosenthal, Ph.D., Lecturer; and Maria Di Campli, Student, Department of Psychology, Melbourne State College, 757 Swanston Street, Carlton 3053, Melbourne, Victoria, Australia.

Purpose: To investigate any ethnic differences in aspirations between migrant and nonmigrant sixth graders.

Subjects: 314 sixth graders, age 11, from nine working class Melbourne suburban schools: 167 Southern European children and 147 nonmigrant children.

Methods: Children completed a questionnaire concerning their educational and occupational aspirations. Children were categorized as (1) wanting to go to a university or not, (2) aspiring to white or blue collar occupations, (3) desiring upward occupational mobility or not, and (4) intending to leave school at age 15 or later. Data were analyzed using a partitioned chi-square analysis with sex and migrant/nonmigrant as the independent variables.

Findings: Migrant children had higher educational and occupational aspirations than their non-migrant peers. They wanted to attend a university more often and were more likely to aspire to a white collar occupation and to a higher occupational level than their fathers. Between the sexes, girls generally aspired higher than boys, except in the case of school leaving age where the trend occurred for migrant girls only.

Duration: May 1977-December 1977.

Cooperating group(s): Melbourne State College Standing Committee on Research.

Publications: Information is available from the investigators.

40-QJ-1

PARENTS' VIEWS ON PARENT INVOLVEMENT AND PARENTS' RIGHTS

Investigator(s): Daniel Safran, Ph.D., Director, Center for the Study of Parent Involvement, 5240 Boyd Avenue, Oakland, California 94618.

Purpose: To examine the factors associated with parental concepts of parent involvement and parent rights in the schools.

Subjects: 193 parents of children in grades kindergarten through 3 in California and Colorado.

Methods: Questionnaires were sent home from and returned to the school. The research included collection of personal information and data on parent involvement experiences, attitudes toward parent involvement and parents' rights, anomie, and the use of semantic differential instruments. Data were treated by one-way analysis of variance and Pearson's correlation of coefficient.

Findings: Analysis to date indicates no significant relationship between the following personal characteristics and attitudes toward parent involvement and parents' rights: age, sex, income, ethnicity, number of children, residence, and education.

Duration: January 1977-August 1978.

Publications: The following publications are available from Center for the Study of Parent Involvement: (1) Handbook: A Parent Involvement Conference Model (\$5.00). (2) Issue papers: #1 Evaluating Parent Involvement, #2 Preparing Teachers for Parent Involvement, and #3 Parent Involvement: Parent Development (\$2.50 each). (3) Newsletter subscription: "Apple Pie" (\$5.00).

40-OK-1

ON BEING A MINORITY IN THE CLASSROOM: EFFECTS OF ETHNIC MIX ON COGNITIVE FUNCTIONING AND ATTITUDES

Investigator(s): Doreen A. Rosenthal, Ph.D., Lecturer; and Susan May Morrison, M.Ed., Senior Lecturer, Department of Psychology, Melbourne State College, 757 Swanston Street, Carlton 3053, Melbourne, Victoria, Australia.

Purpose: To examine the influence of differing proportions of migrant children in Australian schools on the cognitive functioning and attitudes toward self and school of nonmigrant and migrant children; and to compare migrant and nonmigrant children on these variables.

Subjects: 83 male and 84 female migrant children; and 77 male and 70 female nonmigrant children. All children are in grade 6 and have a mean age of 11 years, 4 months.

Methods: There were three schools in each category: high migrant population (80 percent), medium (50 percent), and low (20 percent). Socioeconomic status was controlled using the School Priority Index and father's occupation. A variety of cognitive and attitude measures was obtained using group tests. Cognitive measures included nonverbal divergent and convergent ability, math, and reading achievement. Attitude measures included self-esteem, attitudes toward school and school achievement, attitudes toward migrants, and curiosity. A three-way nested analysis of variance was used to analyze data.

Findings: Nonmigrant children in low migrant population schools scored significantly higher on reading achievement - interpretation in terms of a peer-language model. Nonmigrant children in high migrant population schools scored better on attitudes toward school. Migrant children in medium migrant population schools scored better on all cognitive variables. A comparison between nonmigrant and migrant children revealed no significant differences for the medium migrant population schools group. Nonmigrant children did better in high and low migrant population school groups.

Duration: April 1977-October 1977.

Cooperating group(s): Melbourne State College, Standing Committee for Research and Development.

Publications: Information is available from the investigators.

40-OK-2

**HARMFULNESS OF FORCED BUSING TO MINORITY CHILDREN:
AN EMERGING HYPOTHESIS**

Investigator(s): Ralph Scott, Ph.D., Professor, Department of Educational Psychology and Director, Educational Clinic, University of Northern Iowa, Cedar Falls, Iowa 50613.

Purpose: To determine the effects of forced busing of minority children.

Subjects: School children, ages 6 to 18, from 14 cities utilizing mandated busing; parents of some of the children; and data supplied by research divisions of school districts.

Methods: The researchers reviewed solicited statements from parents, assessed findings of school district research departments and school officials, and reviewed comments from the children.

Findings: Forced busing does not promote the achievement of emotional development of minority children. There is evidence that forced busing weakens the family structure, leads away from and not toward integration, sparks school violence, and drains resources which could be more meaningfully utilized (e.g., fiscal, school, personnel, etc.).

Duration: 1963-continuing.

Publications: Scott, R. and Walberg, H. (Eds.) *Beyond busing: Some constructive alternatives*. Washington, D.C.: American Education Legal Defense Fund, 1976.

40-OK-3

THE DEVELOPMENT OF WOMEN WITHIN THE EDUCATIONAL SYSTEM

Investigator(s): Vicki Green-Nealey, Ph.D., Assistant Professor, Developmental Psychologist, and Women's Studies Specialist; and Larry Hochaus, Ph.D., Statistical Consultant, Department of Psychology; and Shaila Aery, Ph.D., Special Assistant to the Vice-President for Academic Affairs; John C. McCullers, Ph.D., Department of Family Relations and Child Development; and Winona Somervill, Department of Sociology, Oklahoma State University, Stillwater, Oklahoma 74074.

Purpose: To summarize relevant developmental data on adolescent and young adult females; and to develop appropriate curricula and services for women and make recommendations relative to initiating them in the appropriate educational facilities.

Subjects: Male and female secondary school and college students.

Methods: The study is divided into two parts. In the first part, developmental data on females is being collected in the secondary schools, at a 2-year and 4-year college in the state, and at Oklahoma State University. Information on age matched males will be collected to provide comparison data. Background Information: Demographic information will be obtained for all individuals so that sex differences can be related to race, socioeconomic status, and parents' occupations and education. Biological Information: Information will be obtained on physical growth and biological development specific to puberty. In the second part of the study, the 3rd year, the data obtained in the first part, when relevant, will be utilized to develop curricula and support services for women, and perhaps men. The project staff will formalize in detail a program of curriculum development and services necessary for maximizing the growth of women in the postsecondary, and possibly, the secondary school. This program will be presented to the appropriate educational facilities along with recommendations related to initiation of such a program.

Duration: September 1977-Summer 1981.

Cooperating group(s): (1) Oklahoma State Regents for Higher Education. (2) Several individuals acted as consultants to the project: From the University of Oklahoma: Dr. Barbara Uehling, Provost; and Dr. Diane J. Willis, Director, Psychological Services, Child Study Center. From Oklahoma State University: Dr. Beverly Crabtree, Dean, Division of Home Economics; Dr. Donald W. Robinson, Dean, College of Education; and Dr. Robert Vincent, Special Assistant to the

Chancellor. From Pennsylvania State University: Dr. Carolyn Sherif, Professor, Psychology Department. From the University of Texas: Dr. Janet T. Spence, Professor, Psychology Department.

Specific Skills

40-PA-1 ADAPTIVE EDUCATION PROGRAM

Investigator(s): William W. Cooley, Ed.D., Co-Director; and Robert Glaser, Ph.D., Co-Director, Learning Research and Development Center, University of Pittsburgh, 3939 O'Hara Street, Room 648, Pittsburgh, Pennsylvania 15260.

Purpose: To develop a design for a study of the effectiveness of individualized instruction in the teaching of reading and mathematics as compensatory education.

Subjects: Approximately 6,000 children in grades kindergarten through 6.

Methods: The commitment of the Learning Research and Development Center is to show how the structure and practices of elementary schooling can be designed to meet the diverse needs of students, rather than requiring that all students, regardless of their individual differences, fit into a uniform program. Quality and equality in elementary school education will not result from offering the same program to all. What is required are environments that reach out to every child to maximize his or her attainment of intellectual, cognitive, and social literacy. The design of such environments is the mission of the Adaptive Education Program.

Duration: 1964-continuing.

Cooperating group(s): (1) Pittsburgh Area Schools. (2) Wilksburg Schools. (3) Follow Through School Districts. (4) National Institute of Education; U.S. Department of Health, Education, and Welfare.

40-PA-2 DEVELOPMENT OF A CURRICULUM FOR PRE-MATHEMATICS AND PRE-SCIENCE ACTIVITIES FOR YOUNG CHILDREN

Investigator(s): Veena R. Mistry, Ph.D., Lecturer; and Gita Dhawan, Student Investigator, Child Development Department, Faculty of Home Science, Maharaja Sayajirao University, Baroda, Gujarat, India 390 002.

Purpose: To plan activities for young children (especially children ages 3 to 6) emphasizing the concepts of size and shape; to devise activities and construct pre- and posttests dependent on behavioral objectives of the concepts and subconcepts; to determine if the exposure to activities has increased the hierarchical status of subjects' performance on tasks using concepts of size and shape; and to prepare a manual of activities emphasizing the concepts of size and shape.

Subjects: 18 kindergartners, mean age: 5 years 8 months, equally divided by sex, from Chetan Balwadi Laboratory Nursery School. To maintain the consistency of years of exposure to pre-school experience, only children who had 2 years of preschool were included in the sample.

Methods: A tool was formulated consisting of activities for the concepts of size and shape. Each concept was divided into various subconcepts, and, within the subconcepts, activities were arranged in a hierarchical sequence from simple to complex. A pilot study was conducted to check the sequence of the activities. To formulate the pre- and posttests, activities were selected randomly from the tool for each level of the hierarchical sequence. All of the subjects were administered the pretest and were subdivided into three groups depending on the level of their performance. The program for the development of the concepts of size and shape began 1 week after pretesting terminated. The program lasted 3 weeks. The three groups received the program separately for 30 to 45 minutes each day, so that investigators could work with small groups and help individuals when there was a need. Investigators were careful not to provide children with ready

made answers, but to expose them to a variety of experiences and activities, and to let them interact to find solutions to the activities. A posttest was administered 1 week after the end of the program.

Findings: "T" values were calculated at .05. Except for subconcepts matching and conservation for concept of size, "t" values for the various subconcepts for concept of size and shape, separately as well as total, were found to be significant at 0.0005. "T" values for the subconcept of matching and conservation were found to be significant at 0.005 and 0.05 respectively. The results suggest that there are individual differences among children in terms of interests and abilities that dominate their process of learning. Working in small groups helps in gaining knowledge about the way children learn and also in satisfying their curiosity. It is essential that sequence of activities should be from simple to complex and from concrete to abstract to foster the learning process. Objects from environmental and waste materials can be effectively used to promote learning and for making materials to suit the needs of a program. The specificity of objectives for each activity, as well as for groups of activities, help in conducting the program.

Duration: January 1976-April 1978.

Publications: Information is available from the investigator.

40-PA-3

INTERNATIONAL ASSOCIATION FOR THE EVALUATION OF EDUCATIONAL ACHIEVEMENT (IEA) SECOND MATHEMATICS SURVEY

Investigator(s): Roy W. Philipps, International Coordinator; and Kenneth J. Travers, Professor and Chairman, International Mathematics Committee, IEA International Coordinating Unit, Department of Education, Private Bag, Wellington, New Zealand.

Purpose: To identify changes in mathematics achievement since the first mathematics survey in 1964.

Subjects: Population A: All students in the grade level in which the majority of students are ages 13.0 to 13.11. Population B: All students who are in the normally accepted terminal grades of secondary schooling.

Methods: The focus of this survey is on the issues of curriculum, classroom processes, and benchmark comparisons. An initial curriculum analysis report is providing a broad cross-national perspective of current mathematics education from the 10 or so countries already participating. Cognitive instruments and the sampling design are being formulated for the actual survey. Data will also be collected from questionnaires given to schools, teachers, and pupils.

Duration: October 1976-June 1981.

Cooperating group(s): (1) Ford Foundation in cooperation with the New Zealand Council for Educational Research. (2) National Institute of Education; U.S. Department of Health, Education, and Welfare in cooperation with Research for Better Schools Laboratory, Philadelphia.

40-PA-4

WOMEN AND MATHEMATICS: PREDICTION AND CHANGE OF BEHAVIOR

Investigator(s): Julia Sherman, Ph.D., Director, Women's Research Institute of Wisconsin, Inc., 202 North Midvale Boulevard, Madison, Wisconsin 53705.

Purpose: To identify cognitive and affective factors that predict boys' and girls' enrollment and performance in advanced high school mathematics in grades 11 and 12.

Subjects: Boys and girls in grades 11 and 12, from four high schools in Madison, Wisconsin.

Methods: The study will use a longitudinal design, providing a powerful approach for the identification of causal factors. Prediction will be based on characteristics of the students identified in grades 8 and 9. Data are available on the following cognitive and affective variables: verbal and/or general ability, spatial visualization, math achievement, math activities outside school, and eight attitudinal scales (confidence in learning mathematics; perceived attitudes of mother, father, and teacher toward the student as a learner of math; attitude toward success in math; math as a male domain; and effectance motivation in mathematics). In previous research, these variables all

showed meaningful relationships to mathematics achievement and enrollment. This study will explore the stability of these relationships over time. In addition, the study will focus on sex role attitudes and ways of coping with sex role conflicts which differentiate girls who do and do not continue in the study of mathematics. The information will be collected through interviews with girls in grades 11 and 12.

Duration: October 1977-September 1979.

Cooperating group(s): National Institute of Education; U.S. Department of Health, Education, and Welfare.

40-PA-5

PROBLEM SOLVING PROTOCOLS OF PAPUA NEW GUINEA CHILDREN

Investigator(s): Lilia Semilla-Dubé, Ph.D., Senior Lecturer, Mathematics Department, Papua New Guinea University of Technology, Box 793, Lae, Papua, New Guinea.

Purpose: To record, analyze, and categorize the ways in which a sample of Papua New Guinea school children solve problems in mathematics classes.

Subjects: Nine boys and nine girls, averaging 12 years of age, selected randomly from six standard classes of 10 primary schools in Lae, Papua, New Guinea.

Methods: Rapport was established with each child before s/he was given a problem (defined as "a situation to which automatism does not provide an effective answer"), so that s/he would verbalize his/her thoughts while thinking out the solution. Verbalizations were audiotaped and transcribed. Notes taken by the interviewer describing the overt behavior of the child were incorporated into the transcripts. Transcripts were analyzed using logical, psychological, and pedagogical considerations to determine patterns (i.e., protocols) in problem solving methods used by the children.

Findings: Two kinds of protocols were determined: (1) Direct Approach Protocols: in which the problem solver used the operation stated in the problem to find its solution, and (2) Inverse Approach Protocols: in which the problem solver used the inverse of the operation stated in the problem to find its solution. Either approach was done by using a definition of the operation, building models, or searching through a store of recalled number facts.

Duration: November 1976-completed.

Publications: Semilla-Dubé, L. The problem solving protocols of Papua New Guinea children. *Southeast Asian Mathematical Society Bulletin*, November 1977, 1(2).

40-PB-1

THE USE OF A PSYCHOEDUCATIONAL TEAM IN A COMMUNITY REMEDIAL READING PROGRAM (CHILDREN'S ART CARNIVAL)

Investigator(s): Gilbert Voyat, Ph.D., Professor, Department of Psychology, City College of the City University of New York, 3332 Broadway, New York, New York 10031.

Purpose: To develop an ongoing interaction between teachers and psychologists with selected children from New York public schools in Harlem.

Subjects: 180 children each semester, ages 7 to 12, who are at least 2 years below reading level.

Methods: Through empirically based interactions, intervention techniques are developed and applied in various art workshops. The techniques are geared to enhance all aspects of the symbolic function. A Piagetian educational approach is employed.

Findings: Substantial progress in reading is achieved when children are independently assessed over a period of 18 weeks with 2-hour sessions twice a week.

Duration: 1974-1978.

Cooperating group(s): (1) Rockefeller Foundation. (2) Museum of Modern Art. (3) New York City Board of Education, Title I.

Publications: Voyat, G. The use of a psychoeducational team in a community remedial reading program. In *Proceedings of the Jean Piaget Society*. New York: Plenum Press (in press).

40-PB-2**CHILDREN'S STRATEGIES IN LEARNING TO READ**

Investigator(s): Hazel Francis, Ph.D., Lecturer in Education, School of Education, University of Leeds, Leeds, England LS2 9JT.

Purpose: To explore longitudinally the process of learning to read, the nature of difficulties encountered, and the strategies adopted — with particular reference to children from disadvantaged backgrounds.

Subjects: Five girls and five boys are participating in the project from age 5 until they are 9 years old. Subjects were chosen randomly from the total year intake of a school in a disadvantaged locality.

Methods: The 10 children are visited weekly for observation, interview, and experimental investigation. Standardized reading, language, and intelligence tests are used or envisaged, as appropriate, though most of the data collection is not in this form. Lateral extension of observation or experiment to a larger sample, which includes other schools, is used for points of special interest.

Duration: January 1976-July 1979.

Publications: *British Journal of Educational Psychology*, 1977, 47, Part 2.

40-PB-3**TRANSLATING BOOKS FOR CHILDREN AND YOUNG PEOPLE: EMPIRICAL STUDIES AND RECOMMENDATIONS**

Investigator(s): Göte Klingberg, Ph.D., Professor, Department of Educational Research, Göteborg University, Fack, S-431, 20 Mölndal, Sweden.

Purpose: To define the problems that are important when translating books for children, especially taking into consideration that the prospective readers are young people and that one of the purposes of translating books for them is to promote knowledge and understanding between different countries and cultures; to define the categories of criteria to be used in examining translations of children's books and to discuss the methods used in such examinations; to give structure to the problems of translation in the form of recommendations to translators and publishers in order to stimulate a discussion of how to solve the problems; and to design a prototype for information to teachers, librarians, and others on existing translations and their quality.

Subjects: Children's books that have been translated from English to Swedish and from Swedish to English.

Duration: 1975-completed.

Publications: Klingberg, G. Translating books for young people: Empirical studies and recommendations. Report No. 74, 309 pp. Mölndal, Sweden: Pedagogiska institutionen, Lärarhögskolan i Mölndal, 1977. (In Swedish with a 13-page English summary.)

40-PB-4**SEXISM IN CHILDREN'S LITERATURE**

Investigator(s): Veena Mistry, Ph.D., Lecturer; and Chandra Arora, Student, Department of Child Development, Faculty of Home Science, Maharaja Sayajirao University, Baroda, Gujarat, India 390 002.

Purpose: To determine whether Indian children's literature has a sexist bias (any arbitrary stereotyping of males and females on the basis of their gender); and to determine the extent of any bias found.

Subjects: 10 female and 6 male evaluators from the fields of child development, linguistics, education, fine arts (painters, illustrators), and English literature.

Methods: Evaluators examined 16 books published in India for preschool and first grade children. An evaluative checklist was constructed consisting of five categories: story content, illustrations, language, role identification, and relational terms. Statements were constructed under each cate-

gory based on significant aspects of each area. The statements were placed against a 4-point rating scale of Yes, No, Not Clear, and Not Applicable. Similar statements were added to cross check responses. A pilot study was conducted to check the language structure of the statements as well as their suitability and applicability as tools for assessing sex bias. Suggestions given by experts in terms of modification in the statements were incorporated in the final criteria. The sample of 16 books was divided into four batches of four books each and was circulated among the subjects. The subjects were requested to evaluate the books as per items on the checklist and to give suggestions for the improvement of the evaluation criteria.

Findings: Results indicated that male illustrations outnumbered female illustrations by 102 to 21. A similar trend prevailed in terms of placement of male and female figures: females dominated illustrations four times, while males dominated illustrations 29 times. There were 64 illustrations that fell into the not applicable and not clear ratings. There was distinct discrimination found in the roles of males and females. Females were seen as noneducators, noninitiators. They did not take risks; performed household tasks; and in 14 instances, were not given any role. Males were deprived of a role only twice. Contrary to expectations, beauty was rewarded equally in both sexes. However, the portrayal pointed out a preponderate male master, female slave relationship in the storybooks. In the language category, women were found to be subservient and decisions rested mainly with the males. In totality, women were portrayed as insignificant members of society to the extent of being almost inconspicuous.

Duration: July 1976-completed.

40-PB-5

MEASURING GROWTH IN WRITING IN COLLEGE FRESHMEN

Investigator(s): Barbara F. Nodine, Ph.D., Assistant Professor, Department of Psychology, Beaver College, Glenside, Pennsylvania 19038.

Purpose: To collect basic descriptive data on the writing produced by college freshmen during a year-long course in composition; and to demonstrate the increase in skills accrued during the year.

Subjects: 14 college freshmen, selected only because they were in the same instructor's sections all year.

Methods: The research design employed measures of writing: T-units (see K. Hunt, Society for Research in Child Development (SRCD) Monograph, 1970), error analysis, and holistic scoring.

Duration: September 1976-completed.

40-PB-6

EVALUATIVE CRITERIA FOR PICTURE STORYBOOKS FOR CHILDREN, AGES 4 TO 6

Investigator(s): Veena R. Mistry, Ph.D., Lecturer; and Meena Mathur, Student, Child Development Department, Faculty of Home Science, Maharaja Sayajirao University, Baroda, Gujarat, India 390 002.

Purpose: To formulate evaluative criteria for picture storybooks in order to provide guidelines for authors, publishers, illustrators, teachers, parents, and librarians to select children's storybooks; and to evaluate a few picture storybooks published in India for children, ages 4 to 6.

Subjects: Sample I: 20 experts from the field of preschool education and 10 illustrators and authors of children's literature. Sample II: 40 kindergarten and first grade teachers: five teachers each from eight English medium schools in which storytelling and reading were part of the school curriculum. Sample III: 40 books selected because (1) they were picture storybooks published in India for children, ages 4 to 6; (2) they would represent prominent Indian publishers (as far as feasible five books were randomly selected from each publisher); and (3) they were animal stories; stories related to children's lives; or adventure, moral, or humorous stories.

Methods: Evaluative criteria were formulated for five areas of picture storybooks; i.e., plot, characterization, style, illustration, and format. Experts were asked to rate criteria statements on a 5-point rating scale ranging from very essential to least essential. The experts were also requested

to weight, in terms of percentage, each section of the criteria for its degree of importance in relation to a picture storybook. The 30 responses received from the experts were analyzed to determine the degree of essentiality (factor coefficient) per item and weighting in percentage per section. The selected books were evaluated by the 40 kindergarten and first grade teachers using the formulated criteria on a 5-point rating scale ranging from excellent to poor. Responses were tabulated and the number of responses on each subunit were multiplied by their respective scores. The scores obtained were multiplied by the factor coefficient and added to determine the total scores obtained on each item in relation to a specific book evaluated.

Findings: Results indicated that all the statements in the criteria were rated between most essential to essential. Illustrations obtained the maximum weighting; format, the minimum. The majority (19) of the books were rated Good, five books were rated Excellent, and four were rated Average. More books were rated lower in illustrations, style, and format than in plot and characterization. The majority of books published in India are based on animal themes. There is a lack of enough literature for young children.

Duration: Completed.

Publications: Papers will appear in *Indian Educational Review* and *Australian Preschool Journal*.

Special Education

40-QD-1 EDUCATION OF DISTURBED PUPILS

Investigator(s): Mary D. Wilson, Ph.D.; and Mary Evans, Ph.D., Co-Directors; and J. Kiek, B.A.; and R.L. Dawson, M.Sc., Research Officers, Schools Council Project, Philippa Fawcett College, Leigham Court Road, London, England SW16 2QD.

Purpose: To study and disseminate the principles of good practice in the education of disturbed pupils.

Subjects: School children, ages 5 to 16, who cause concern to teachers because of emotional disturbance or difficult behavior.

Methods: Three questionnaires were sent to special schools, regular schools that had been recommended for working well with disturbed pupils, and special classes. Selected schools and classes were visited. Teachers' meetings were held in different regions of England and Wales.

Duration: September 1975-July 1978.

Cooperating group(s): (1) Schools Council, London. (2) Inner London Education Authority.

Publications: (1) Wilson, M.D. *et al.* Disturbed children in special schools. *Special Education - Forward Trends*, June 1977, 4(2). (2) Wilson, M.D. Educating disturbed children: Present practice and future prospects. *Education 3-13*, April 1976, 4(1), 5-9.

40-QF-1 CONVERGENCE OF TEACHER RATINGS OF CLASSROOM BEHAVIORS WITH DIRECT SYSTEMATIC OBSERVATION OF THE SAME BEHAVIOR

Investigator(s): Rina Ullmann, M.Ed., Research Associate; and Robert L. Sprague, Ph.D., Professor and Director, Institute for Child Behavior and Development, University of Illinois, 51 Gerty Drive, Champaign, Illinois 61820.

Purpose: To compare teacher ratings of the classroom behaviors of hyperactive children with direct systematic observations of the same behaviors.

Subjects: Four boys and one girl, ages 6 years 5 months to 9 years 9 months, referred to the pediatric psychopharmacology project for amelioration of hyperactive behavior.

Methods: The five children were given two levels of stimulant medication and placebo on a randomly assigned, within subjects, cross-over, double blind design. They were observed regularly during individual work periods. Teachers rated the children's behavior for the period observers were present. Observers and teachers were concerned with the same behaviors. Teacher ratings were compared with the direct systematic observations, using Pearson product-moment correlations.

Findings: Teacher ratings were significantly correlated with direct observations for three categories of behavior: on task, sitting, and negative peer interaction.

Duration: June 1977-continuing.

40-QF-2

SEVERELY EDUCATIONALLY HANDICAPPED CHILDREN

Investigator(s): C.J. Phillips, Director; Beryl Smith, Research Fellow, B.Sc. Dip.Ed.Psy.; Jean Banks, Psychiatric Social Worker; and Andrew Sutton, Honorary Lecturer, Centre for Child Study, Faculty of Education, University of Birmingham, P.O. Box 363, Birmingham B15 2TT, England; and J. Lisle, Senior Psychiatric Social Worker, Child Guidance Clinic, Reading, Berkshire, England.

Purpose: To survey the needs of families with a severely educationally handicapped child; to describe the etiological and clinical characteristics of the sample; and to investigate the children's conceptual and linguistic development and their educational implications.

Subjects: 212 children, ages 6 to 12 in 1973, attending special day schools in Birmingham and living with their natural families.

Methods: Data include questionnaires completed by the schools, parental interviews, and individual psychological examinations of the children.

Duration: 1973-1979.

Cooperating group(s): (1) Spastics Society. (2) Paul S. Cadbury Trust. (3) Clarkson Foundation. (4) Combined Fund for the Mentally Handicapped.

Publications: Phillips, C.J. and Smith, B. (Eds.) *Severely educationally handicapped children*. Report Volume One, 1973-1975. Birmingham, England: Centre for Child Study, Faculty of Education, University of Birmingham.

40-QF-3

EPIDEMIOLOGY OF BEHAVIOR DISORDERS AND LEARNING DISABILITIES

Investigator(s): Hans R. Huessy, M.D., Professor, Department of Psychiatry, Outpatient Psychiatry Service, DeGoesbriand Unit, Medical Center Hospital of Vermont, University of Vermont, Burlington, Vermont 05401.

Purpose: To determine the incidence and progression of behavior disorders and learning disabilities over time.

Subjects: 500 children followed since 1966 when they were in second grade.

Methods: Children's teachers were administered questionnaires in the 2nd, 4th, and 5th grades. Ninth and 12th grade school records were inspected. A direct interview is planned for 1980.

Findings: The more a child shows symptoms of behavior disorder or learning disability in the early grades, the more likely that child will have serious troubles in 9th and 12th grades.

Duration: 1965-1981.

Publications: (1) Huessy, H.R. and Cohen, A.H. Hyperkinetic behaviors and learning disabilities followed over seven years. *Pediatrics*, 1976, 57, 4-10. (2) Huessy, H.R.; Marshall, C.D.; and Gendron, R.A. Five hundred children followed from grade 2 through grade 5 for the prevalence of behavior disorder. *Acta Paedopsychiatrica*, 1973, 39, 301-309. (3) Huessy, H.R. and Gendron, R.A. Prevalence of the so-called hyperkinetic syndrome in public school children in Vermont. *Acta Paedopsychiatrica*, 1970, 37, 243-248.

40-QF-4**HYPNOTHERAPY WITH LEARNING DISABLED CHILDREN**

Investigator(s): Lynn S. Johnson, Ph.D., Assistant Professor; and D. Lamont Johnson, Ph.D., Associate Professor, Department of Psychology; and Myrna Olson, Ph.D., Assistant Professor, Department of Education, University of North Dakota, Grand Forks, North Dakota 58202.

Purpose: To determine whether hypnotherapeutic procedures focusing on direct positive suggestion, self-esteem enhancement, and decreased tension in the parent-child-teacher interaction can ameliorate certain learning deficits.

Subjects: 32 children, ages 7 to 13; 16 experimental and 16 control.

Methods: Experimental subjects received the Children's Hypnotic Susceptibility Scale and three group training sessions in self-hypnotically suggesting images of self-esteem and academic improvement. Parents and reading teachers also received hypnotic training in autosuggestions of the child's improvement. Pre- and posttests of grade level performance, self-esteem, and behavioral problems were taken. Measures included the Wide Range Achievement Test, Durell Analysis of Reading Difficulty, Coopersmith's Self-Esteem Inventory, and ratings of children's self-esteem behaviors by parents and teachers. The changes in grade level were compared with those of the nontreated control group.

Findings: Multiple correlations showed self-esteem improvement predictable from hypnotic susceptibility and child's, parents', and teachers' practice. Suggestive group differences were observed in initial susceptibility.

Duration: November 1976-completed.

40-QF-5**EXPERIMENTAL TRAINING PROCEDURE FOR CHILDREN WITH LEARNING DISABILITIES**

Investigator(s): Marilyn L. Pinheiro, Ph.D., Associate Professor/Neurosciences, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699.

Purpose: To determine whether special training in visual, tactual, and auditory sequencing tasks, as well as training in tasks that probably require interhemispheric processing, will help improve the overall performance of children with learning disabilities.

Subjects: An experimental and a control group of learning disabled children. There are 8 to 10 children in each group.

Methods: The experimental group will receive the special experimental training twice each day in addition to the regular learning disabilities classroom program. The control group will participate only in the regular program. The experimental training includes tactual matching and sequencing using object shapes, visual matching and sequencing of pictured shapes, auditory matching to pictures and sequencing of environmental sounds, and auditory processing of words in noise and competing and simultaneous sentences. Each child will be individually trained in these tasks progressively through the school year. Both control and experimental groups will be pre- and posttested on a battery of central auditory processing tasks.

Duration: October 1977-June 1978.

Cooperating group(s): Maumee Schools.

40-QF-6**DIAGNOSING LEARNING DISABILITIES WITH REACTION TIME DATA**

Investigator(s): E. Scott Geller, Ph.D., Associate Professor, Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061; and Carol A. Geller, M.S., Instructor, Department of Psychology, Radford College, Radford, Virginia 24141.

Purpose: To differentiate the cognitive processing of children labelled "learning disabled" from normal children by comparing reaction times in a series of paradigms.

Subjects: 15 learning disabled boys, ages 9 to 11; and 15 normal boys. All of the subjects have normal IQs, are in grades 3 to 6, and are from Southwest Virginia.

Methods: In individual sessions, the child is given four different reaction time tasks: (1) simple reaction time (RT), (2) selective RT, (3) choice RT (100 trials of each), and (4) Sternberg RT tasks with memory set sizes of 1, 3, and 5 (100 trials of each).

Findings: Stimulus encoding time = Task 2 minus Task 1 time; decision time = Task 3 time minus Task 2 time. Learning disabled children show longer encoding times than decision times; whereas, normal children show longer decision times than encoding times.

Duration: September 1977-June 1978.

Cooperating group(s): National Science Foundation.

40-QH-1

SPECIAL EDUCATION: EARLY CHILDHOOD HOME TEACHING PROJECT

Investigator(s): Ronnie N. Alexander, Ed.D., Associate Professor, Department of Special Education, University of Texas, San Antonio, Texas 78285; and Cathy Roche, M.Ed.Spec.; and Lindy Moxzgemba, B.A.Ed., Harlandale School District, San Antonio, Texas.

Purpose: To evaluate the degree to which lower income parents of preschool handicapped children can effect skills acquisition of their handicapped child using students as home teachers.

Subjects: 26 economically disadvantaged families with handicapped children, ages 3 to 6. Children had a variety of handicapping conditions. Some families spoke only Spanish.

Methods: Children were assessed at the beginning of the program. Based on these assessments, student trainers helped parents decide on target skills for their child. Parents were given training in how to help their child in the target areas chosen. Parents worked at one skill per week or on a class of skills throughout the program. Student trainers paid a minimum of six weekly visits to each family. Parents were asked to keep daily records of their child's performance. At the end of the program, parents were administered a questionnaire designed to assess their perceptions of the program. An analysis was made of the number of targeted behaviors vs. success rate (30 percent or more change in target behavior).

Duration: June 1977-completed.

40-QH-2

THE CONTRIBUTION OF ALTERNATIVE SCHOOL PROGRAMS TO THE SAFETY OF AMERICAN SCHOOLS

Investigator(s): Martin Gold, Ph.D., Study Director, Research Center for Group Dynamics, Institute for Social Research, University of Michigan, Box 1248, Ann Arbor, Michigan 48106.

Purpose: To evaluate the nature and effectiveness of alternative schools for disruptive high school youth.

Subjects: 400 to 600 adolescents eligible for and/or attending alternative schools.

Methods: An experimental design is being used in which experimental and control groups are enrolled in alternative programs and conventional programs, respectively. Interviews, questionnaires, and observations are used to collect data. A field experiment pairing alternative and conventional schools is also being undertaken.

Duration: May 1977-August 1980.

Cooperating group(s): National Institute of Education, U.S. Department of Health, Education, and Welfare.

SOCIAL SERVICES

40-RB-1

STUDY OF THE USE OF SUPPORT SERVICES BY YOUNG FAMILIES

Investigator(s): Deborah Shapiro, D.S.W., Director of Research; Rosalind Zitner, M.A., Study Director; and Shelby Hayden, M.A., Research Assistant, Child Welfare League of America, Inc., 67 Irving Place, New York, New York 10003.

Purpose: To examine the use of support services by young families in the year following the birth of a child.

Subjects: 200 young mothers under age 20 at their first child's birth.

Methods: The mothers received medical, educational, and social services during pregnancy from four affiliates of the Florence Crittenton Division of the Child Welfare League in Detroit, Toledo, Houston, and Charlotte, North Carolina. Interviews will be conducted with the subjects 1 year after they have terminated their relationship with the Florence Crittenton Services. Mothers and spouses of the subjects will also be included in the interviews when possible. The interview schedule will focus on the young mothers' current life situations, with emphasis on their attitudes toward and use of support services (such as health facilities, educational and vocational services, counseling, and leisure time activities). Analysis will focus on the relationship between the experience of pregnancy-related services and the use of services in the child's first year of life.

Duration: October 1977-March 1979.

Cooperating group(s): Child Welfare League, Florence Crittenton Division.

Publications: Publications will be available from the Child Welfare League of America, Inc. following the project's termination in March 1979.

40-RD-1

REGIONAL PLANNING IN ADOPTION

Investigator(s): John McGowan, Ph.D., Project Director, Welfare Research, Inc., 112 State Street, Albany, New York 12207.

Purpose: To evaluate a project designed to increase adoptive placement of hard-to-place children in a 17-county region.

Subjects: A cohort of 115 legally free, hard-to-place children known at the start of the project; additional children coming to the attention of the project during its course; prospective adoptive parents recruited by the project; parents with approved home studies known to agencies; and adoption caseworkers from participating public and private agencies in a 17-county region.

Methods: Background characteristics of children, including prior foster care history, were examined along with data on project services provided and placement outcomes; analysis of prospective parent recruitment and the relationship of family characteristics to placement outcomes; and comparison of recruited applicants and agency-known families.

Findings: Children with diagnosed physical, psychiatric, or psychological conditions tended to be younger, to have been in care less long, and to have had fewer foster care placements than those without such conditions. However, during the first year of the project, children with no such diagnoses tended to have a better chance of being moved into adoptive placement. During the first year, 60 prospective families participated in the project's orientation program. Thirty-four completed orientation and were referred to agencies. Data were collected on 80 approved families and 33 of these were referred to the project's orientation program.

Duration: May 1975-completed.

Cooperating group(s): (1) New York State Department of Social Services, Title IVB. (2) Parsons Child and Family Center, Albany, New York. (3) Public and private adoption agencies in 17 counties surrounding the Albany, Schenectady, and Troy areas.

Publications: A final report is available from: New York State Department of Social Services and Welfare Research, Inc.

40-RD-2**THE ADOPTION PLACEMENT PROJECT**

Investigator(s): Anthony J. Veronico, M.A., M.S.W., Director, Adoption Placement Project, Welfare Research, Inc., 122 State Street, Albany, New York 12207.

Purpose: To facilitate the adoptive placements of 100 hard-to-place New York City children; to disseminate the cost methodology system for claiming full-cost reimbursement for these adoptions; to develop, with a model agency, an effective training curriculum to expand techniques of other child welfare agencies; to obtain cost data to make future policy decisions regarding full-cost reimbursement; and to evaluate the impact of programmatic and fiscal reforms on the provision of adoption related efforts.

Subjects: 122 boys and 78 girls, ages 2 to 17, who have been free for adoption for 1 year or more, and for whom no adoptive home has yet been identified. The majority of the children were handicapped, school age adolescents.

Methods: Children were randomly placed in either an experimental or a control group. In order not to bias results, children selected for the control group were not identified to their home agency. Experimental group children became the focus of a model program, in which the agency originally handling the child's case maintained foster care services, but transferred placement services to another agency, which had agreed to take the case and which aggressively sought placement. Full-cost reimbursement was provided to agencies successfully placing children not originally from their agency.

Duration: March 1977-February 1978.

Cooperating group(s): (1) New York City Special Services for Children. (2) Edna McConnell Clark Foundation. (3) New York State Department of Social Services.

Publications: Information is available from the investigator.

40-RD-3**MODEL STATE ADOPTION PAYMENT SYSTEM PROJECT**

Investigator(s): Robert J. Ambrosino, Ph.D., Principal Investigator, Welfare Research, Inc., 112 State Street, 10th Floor, Albany, New York 12207.

Purpose: To develop and test a model adoption payment system for use by statewide administrators for making rational decisions about the funding of adoption services.

Subjects: Public and private adoption agencies; and central state adoption agencies throughout the United States.

Methods: The project involved a nationwide survey of the state-of-the-art of adoption services delivery and management, including fiscal management; development of a comprehensive adoption services configuration; development of a comprehensive annotated bibliography of adoption-related literature; creation of alternate payment system models and field testing models; and generation of appropriate recommendations for future application.

Duration: September 1975-December 1977.

Cooperating group(s): (1) Children's Home Society of North Carolina. (2) Children's Home Society of Minnesota. (3) South Carolina State Department of Social Services. (4) New York State Department of Social Services. (5) New York City Special Services for Children.

Publications: *A selected, annotated bibliography of adoption-related literature* is available at cost from Welfare Research, Inc.

40-RE-1**FOSTER PARENT TRAINING PROJECT**

Investigator(s): Patricia Ryan, Ph.D., Project Director; and Bruce L. Warren, Ph.D., Associate Director, Foster Parent Training Project, Eastern Michigan University, Ypsilanti, Michigan 48197.

Purpose: To develop, implement, and evaluate a multilevel curriculum to train foster parents.

Subjects: Over 1,000 parents, trainees, and nontrainees in the program.

Methods: Questionnaires were filled out by trainees in class before and after each 8-week term. A sample of trainees was interviewed at the beginning of training and after 2 years of training. The large sample allowed analysis strategies utilizing a number of multivariate techniques.

Findings: The attitudes of trainees shift in the desired direction during training. There does not appear to be a significant difference between foster mothers who come to training and those who do not. There appears to be a number of differences between foster fathers who come to training and those who do not.

Duration: July 1974-June 1978.

Cooperating group(s): Center for the Study of Metropolitan Problems; National Institute of Mental Health; Health Services and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: Progress reports and draft copies of other materials are available from the investigators.

40-RE-2

FOSTER CARE MANAGEMENT: A REPLICATION OF THE OREGON PROJECT IN NEW YORK STATE

Investigator(s): John McGowan, M.S.W., Project Director; and Charles Bradley, M.P.A., Research Associate, Welfare Research, Inc., 112 State Street, Albany, New York 12207.

Purpose: To demonstrate that the permanency planning techniques developed and implemented through the Oregon-based project, Freeing Children for Personal Placement, are applicable and adaptable to the New York State foster care system.

Subjects: All children, ages 1 to 14, in the project counties of Albany, Rennselaer, and Schenectady who have been in care more than 1 year and would be adoptable.

Methods: At the outset of the project, caseworkers were asked whether or not the child under review was likely to return home. This was done for each case that met the sample requirement of more than 1 year in care. Caseworkers received intensive training in permanency planning techniques and methods of legally freeing children for adoption. Following the training, cases in the sample received intensive service toward the achievement of permanent placement. The project also featured a community education campaign conducted by the Junior League of Albany, New York.

Duration: February 1977-January 1978.

Publications: Information is available from: Virginia Hayes Sibbison, Executive Director, Welfare Research, Inc.

40-RF-1

PARENT-CAREGIVER RELATIONSHIPS IN GROUP CHILD CARE SETTINGS

Investigator(s): Douglas R. Powell, Ph.D., Director, Program Development, Merrill-Palmer Institute, 71 East Ferry Avenue, Detroit, Michigan 48202.

Purpose: To describe the interpersonal relationship between parents and caregivers in group child care settings; to identify variables predictive of parent-caregiver communication; and to examine the degree of congruence in the childrearing beliefs of parents and caregivers.

Subjects: 212 parents and 89 caregivers in 12 urban day care centers. The parent sample was 52.8 percent black and 45.3 percent white; 45.4 percent working class. The caregiver sample was 38.2 percent black and 58.4 percent white.

Methods: Data were collected during structured interviews. Instruments to measure communicative behavior and attitudes were developed as part of the study.

Findings: A typology of parent-caregiver relationships was developed based on variations in communicative behavior and attitudes. As the frequency of parent-caregiver communication increases, the content of communication increases in complexity and diversity, and attitudes toward discussing childrearing values and parent/family related information become positive. Variables found to have a significant influence on parent communication frequency are: the attitude that

parents and caregivers should discuss family information, use of the center for less than 6 months, active participation in an informal social network of parents using the same center, and representing a two-parent family. Variables predictive of caregiver communication frequency include: center role function, friendship relationships with parents, recent completion of formal education, a child-centered role concept, the attitude that childrearing values should be discussed with parents, and few years of formal experience in working with young children. Day care centers with high parent-caregiver communication were characterized by informal social networks among and between parents and caregivers. Overall there was minimal consistency between parent and caregiver preferences, and the least consistency in situations involving a child's prosocial behavior. A negative relationship was found between parent-caregiver childrearing congruence and center communication frequency.

Duration: July 1975-completed.

Cooperating group(s): Ford Foundation.

Publications: A publication list is available from the investigator.

40-RH-1

FORMATIVE EVALUATION OF INNOVATIVE DEMONSTRATION PROJECTS IN CHILD ABUSE AND NEGLECT

Investigator(s): Paula Jean Miller, Ph.D., Project Director; and Larry Redlinger, Ph.D.; Boyd Littrell, Ph.D.; Buford Farris, Ph.D.; William Firestone, Ph.D.; and Harriet Kipps, B.A., Research Associates, CPI Associates, Inc., 2030 M Street, N.W., #605, Washington, D.C. 20036 (or 8436 North Stemmons Freeway, Suite 120, Dallas, Texas 75247).

Purpose: To trace the development and emergence of implementation issues among eight innovative demonstration projects funded by the National Center on Child Abuse and Neglect: four serving native Americans, two serving military personnel, and two serving rural populations.

Subjects: Approximately 1,000 families served by one of the demonstration projects; both parents and children.

Methods: Qualitative data on projects were gathered through quarterly site visits. This information included social context, goals, organizational structure, staffing patterns, program components, clientele, client flow, and implementation issues. Quantitative data were gathered on clientele and on costs and services. Data were analyzed by project. Elaborate statistical analysis was not performed on clientele data because the clients were not a random sample of the target populations served.

Duration: August 1975-March 1978.

Cooperating group(s): National Center on Child Abuse and Neglect; Administration for Children, Youth, and Families; Office of Human Development Services; U.S. Department of Health, Education, and Welfare.

Publications: Five special analyses and a final report are available from the National Center on Child Abuse and Neglect.

40-RH-2

REGION VI RESOURCE CENTER ON CHILD ABUSE AND NEGLECT

Investigator(s): Michael Lauderdale, Ph.D., Associate Professor, Center for Social Work Research, School of Social Work, University of Texas, Austin, Texas 78712.

Purpose: To provide to the states of Arkansas, Louisiana, New Mexico, Oklahoma, and Texas a resource center with a multidisciplinary approach in the fields of social work, medicine, and law, which can make available materials on child abuse and neglect and training and technical assistance to institutions and professionals.

Methods: The resource center will focus on prevention of abuse as well as on identification and treatment. Staff at the center will assist and provide supportive services to agencies, professionals, community groups, etc. to more effectively meet the comprehensive needs of children and their families and others involved in child abuse and neglect. An advisory council and executive com-

mittee will be established. The staff will collect technical information in the form of bibliographic searches, acquisitions, etc. (see Publications below).

Duration: July 1975-June 1978.

Cooperating group(s): University of Texas, Law School and Medical Branch.

Publications: (1) Indexed directory of services available to children and their families in Region VI. (2) Prototype curriculum for training protective service workers. (3) Multidisciplinary training tape with vignettes and half-hour training on parenting. (4) Training tapes on practical child-rearing, working with children in groups, and direct decision therapy. (5) Analysis of service delivery system. (6) Indexed bibliography and summary of child abuse and neglect journal literature. (7) A literature review and analysis on the use of corporal punishment in the care of children.

40-RH-3 SEXUAL ABUSE OF CHILDREN IN PUERTO RICO

Investigator(s): Raúl A. Muñoz, M.S.W.; Ligia V. Rodríguez, M.S.W.; and Luz N. Acosta, M.S.W., Health and Social Studies, Inc., Department of Social Services, Santurce, Puerto Rico 00910. Address correspondence to: Mr. Muñoz, 527 Sergio Cuevas Bustamantes, Hato Rey, Puerto Rico.

Purpose: To determine the incidence of sexual abuse in Puerto Rico and case handling by criminal justice and social service agencies; and to develop a curriculum for training personnel to handle sexual abuse cases.

Subjects: Case information on children reported to the police, social services, and education departments as victims of sexual abuse.

Methods: Data collected included age, sex, rural-urban residence, type of abuse, relation to abuser, source of referral, and disposition.

Duration: November 1976-completed.

Cooperating group(s): (1) Department of Social Services, Puerto Rico. (2) Administration for Children, Youth, and Families; Office of Human Development Services; U.S. Department of Health, Education, and Welfare.

40-RH-4 A FAMILY AIDE PROJECT FOR PARENTS WITH A HIGH RISK OF CHILD ABUSE

Investigator(s): Val D. MacMurray, Ph.D., Associate Professor; and Jack R. Brummitt, M.D., Associate Professor, Division of Community Health Science, Faculty of Medicine; and Perry H. Cunningham, Ph.D., Associate Professor, Faculty of Business, University of Calgary, Calgary, Alberta, Canada T2N 4J8.

Purpose: To evaluate the intervention process, outcome effectiveness, feasibility, and practicality of the services provided by volunteer lay therapists (family aides) working with abusing parents.

Subjects: 100 abusing families obtained from an already existing professional, multidisciplinary treatment team for child abuse which operates in conjunction with this project.

Methods: The evaluation will be based primarily on measurements of the differences between a control group and an experimental group before, during, and after treatment with respect to a number of variables. The two central research questions are: (1) Does the probability or risk of abuse (the dependent variable) among parents in the experimental group decrease significantly more during and after treatment than among parents in the control group? and (2) Which independent and/or control variables or combination of independent and/or control variables, best account for a decrease in the probability or risk of abuse among parents in the study sample? The families were randomly assigned to one of two groups (50 in each group). Families in the control group received treatment by the team alone, while families in the experimental group received treatment by the team and by family aides. A number of dimensions of the dependent variable (such as parents' self-esteem, marital adjustment, childrearing attitudes, child development expectations, parenting skills, child management techniques, and isolation); and a number of independent variables (e.g., the nature of team and family aide treatment and the characteristics of the

family aides); and control variables (e.g., demographic characteristics of the family, the parents' childhood experiences, the nature of the abuse incident, and critical events in the family's life) will be measured at various intervals over the course of the project. Quantitative and qualitative data are gathered from families, family aides, team members, and other project personnel using a variety of instruments — some devised by the project personnel.

Duration: August 1976-August 1979.

Cooperating group(s): (1) Department of National Health and Welfare, Canada. (2) Calgary Child Abuse Project.

Publications: Information is available from the investigators.

40-RH-5

CHILD BEATING: A CROSS-CULTURAL STUDY

Investigator(s): Stephen Juan, C.Phil., Lecturer, Department of Education, University of Sydney, Sydney 2006, Australia.

Purpose: To discover the prevalence and incidence of child beating behavior in primitive, non-industrial societies; and to discover the nature of violence in the intimate environment of families in other human cultures.

Subjects: Data for this study were obtained from the writings on 22 nonindustrial societies drawn from the Murdock and White (1969) standard cross-cultural sample of 186 societies.

Methods: This research employed a standard hologetic cross-cultural method consisting of simple statistical correlation procedures. No first hand ethnographic fieldwork was involved. Ethnographies of 22 cultures were treated as historical documents.

Findings: Severe beatings of children are extremely rare. Child beating was not positively correlated with any major social structural variable.

Duration: June 1976-December 1977.

Cooperating group(s): Norstram Foundation.

Publications: University Microfilms, Department of Education, University of Sydney; and School of Education, University of California, Berkeley.

40-RH-6

DEVELOPMENTAL APPROACH TO GROUP HOME TREATMENT OF ABUSED CHILDREN

Investigator(s): Irving N. Berlin, M.D., Professor of Psychiatry and Pediatrics, Division of Mental Health, Sacramento Medical Center, 2315 Stockton Boulevard, Sacramento, California 95817.

Purpose: To provide developmental support to group home parents to help with the recovery process of abused children.

Subjects: 10 abused and neglected children, ages 3 to 10.

Methods: The children were examined by a pediatrician to obtain a statement about their physical and nutritional status. They were also evaluated in a psychiatric diagnostic interview as well as by developmental psychologists who used a variety of tests depending on the age of the child. The Bayley Scales of Infant Development was the most frequently used instrument, although the Stanford-Binet Intelligence Scale and the Wechsler Adult Intelligence Scale were also used, depending upon which was more applicable. Evaluations, both psychological and psychiatric, were conducted, in order to look at physical, cognitive, and interpersonal development in ego-psychological terms. Descriptions from the foster parents were obtained early and on a regular basis to determine the continued development of the child. Monthly meetings, held in several foster parents' homes, included social workers working with the children and parents and paraprofessionals who worked as relief caretakers with each foster parent. Project personnel made recommendations to the court, carried on investigations of foster parents with regard to children who would be placed for a considerable period of time away from their parents, and continued their involvement with foster parents as part of the program.

Findings: There is a great contrast between the experimental children, who have made marked developmental gains, and children who have been placed in ordinary foster care, who have made

very few gains both from a psychological developmental as well as a physical developmental standpoint. These children are often able to bring about their own rejection by the foster parents. The controls have made minimal gains.

Duration: May 1976-May 1978.

Cooperating group(s): Welfare and Protective Services.

40-RH-7

PROJECT THRIVE: ENHANCING THE BLACK FAMILY AND PROTECTING THE CHILDREN

Investigator(s): Natalie Dowdell, Director; and Johanne C. Dixon, Assistant Director, Project THRIVE, National Urban League, Inc., 500 East 62nd Street, New York, New York 10021.

Purpose: To provide information (resource and demonstration) on black family lifestyles and childrearing practices to be used by providers of services.

Subjects: Survey 1: Medical, legal, law enforcement, social welfare, day care, and educational agencies in Indianapolis, Indiana and Columbus, Ohio. Survey 2: A selected sample of black families in 10 midwestern cities.

Methods: Agencies were surveyed on their perceptions of child abuse incidence and treatment practices. Black families were surveyed on childrearing practice issues and on knowledge of community and service resources dealing with child abuse and neglect.

Duration: January 1975-June 1978.

40-RH-8

THERAPEUTIC INTERVENTIONS WHICH FOSTER EGO DEVELOPMENT IN ABUSED/NEGLECTED CHILDREN

Investigator(s): Mark J. Flanzraich, M.S., Social Worker/Teacher and Activity Therapist; and Gloria Steiner, Ed.D., Chief Psychologist, Family Life Education Center, United Hospitals of Newark, Newark, New Jersey 07107.

Purpose: To develop new therapeutic techniques in the treatment of abused/neglected children.

Subjects: 60 Black and Puerto Rican girls and boys, ages 2 to 16, from lower socioeconomic backgrounds.

Methods: The research methodology included clinical observations during play therapy and activity therapy.

Findings: The results indicated that there are associations between ego distortion in abused/neglected children and specific parental practices. New insights have been gained on how an abuse cycle is transmitted across generations.

Duration: May 1977-September 1977.

40-RI-1

GUIDE FOR DETERMINING THE ABILITY OF AN ABSENT PARENT TO PAY CHILD SUPPORT

Investigator(s): Mignon Sauber, Associate Executive Director for Research; and Edith Taittonen, Chief, Budget Standard Service, Community Council of Greater New York, 225 Park Avenue South, New York, New York 10003.

Purpose: To establish guidelines to determine the amount of child support absent parents should be required to pay.

Methods: Through the compilation and analysis of relevant data and the deliberation of a panel of experts, guidelines were developed to assess the economic position of an absent parent, to determine that parent's ability to provide child support, and to establish the amount of the child support obligation. A key element was the utilization of the products of the family budgets research program of the U.S. Department of Labor, Bureau of Labor Statistics.

Duration: September 1976-completed.

Cooperating group(s): Social and Rehabilitation Service; U.S. Department of Health, Education, and Welfare.

Publications: *Guide for determining the ability of an absent parent to pay child support.* New York: Community Council of Greater New York, May 1977.

HEALTH SERVICES

40-SA-1 NURSING CHILD ASSESSMENT FOLLOW-UP

Investigator(s): Kathryn E. Barnard, Ph.D., Professor; and Sandra Eyres, Ph.D., Assistant Professor, School of Nursing; and Carol Ann Gray, Ph.D., Associate Professor, Department of Educational Psychology, University of Washington, Seattle, Washington 98195.

Purpose: To develop and validate existing methods of assessing the health and developmental status of infants and young children.

Subjects: 178 children, ages 0 to 4, who were recruited prenatally and are the firstborn in their families. Subjects represent a cross-section of sex, race, and socioeconomic status.

Methods: Children are seen when newborn and at ages 1 month, 4, 8, 12, 24, 36, and 48 months. At each age, a variety of assessment and screening techniques are undertaken with each of the families and the child under study. Data analysis has been directed at identifying significant antecedent-outcome relationships.

Duration: 1971-1979.

Cooperating group(s): (1) Division of Nursing; Health Resources Administration; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) University of Washington, Child Development Mental Retardation Center.

Publications: Barnard, K.E. and Douglas, H.B. *Child health assessment Part 1: A literature review*. DHEW Publication No. (HRA) 75-30. Bethesda, Maryland: U.S. Department of Health, Education, and Welfare; Public Health Service; Health Resources Administration; Bureau of Health Resources Development; Division of Nursing; December 1974.

40-SA-2 OTOADMITTANCE SCREENING OF PRESCHOOL CHILDREN

Investigator(s): Norma T. Hopkinson, Ph.D., Clinical Associate Professor; and Victor L. Schramm, M.D., Otolaryngologist, Department of Otolaryngology; and Sandra H. Leggett, M.S., Clinical Audiologist, Division of Audiology, University of Pittsburgh School of Medicine, Eye and Ear Hospital of Pittsburgh, 230 Lothrop Street, Pittsburgh, Pennsylvania 15213; and Barbara F. Bosse, A.B., Audiometrician, 4520 Old William Penn Highway, Monroeville, Pennsylvania 15146.

Purpose: To determine the efficacy of including tympanometric examinations along with the conventional screening procedures in testing young children's hearing.

Subjects: 2,125 preschool boys and girls, ages 3 to 6.

Methods: Tympanometry and pure tone screening was conducted at schools and day care centers. Testing was conducted over an 18-month period in such a way that similar groups of children were examined during each season for six seasons, so that seasonal changes in hearing would be taken into account. Follow-up studies were conducted at the Eye and Ear Hospital of Pittsburgh and included otolaryngological and audiological examinations. Data will be analyzed using a pass-fail matrix across all tests to determine the strength of the test in the identification of hearing loss or otopathology.

Duration: October 1975-May 1978.

Cooperating group(s): Pittsburgh Public School System and numerous private schools.

40-SA-3 NATIONAL SURVEY OF HEALTH AND DEVELOPMENT: SECOND GENERATION STUDY

Investigator(s): N.E.J. Wadsworth, Ph.D., Scientific Staff, Medical Research Council, Unit for the Study of Environmental Factors in Mental and Physical Illness, London School of Economics, 20 Hanway Place, London W1P 0AJ, England.

Purpose: To study childrearing and family behavior of adults who have been studied at intervals of not less than 2 years since birth; and to determine the relationship between (1) current behavior and early social, psychological, and medical experience and (2) illness and verbal intelligence at age 8 in two generations.

Subjects: 5,362 men and women born in March 1946 and their firstborn children. The original sample is from the British National Survey of Health and Development described in Douglas, J.W.B. The use and abuse of national charts. In N. Shipman (Ed.), *The organization and impact of social research*. London: Routledge Kegan Paul, 1976.

Methods: Data are collected (1) by questionnaires mailed to hospitals, in which women survey members are queried about birth and the circumstances of birth; (2) in home interviews by trained interviewers using semistructured questionnaires when the firstborn is 4 years old; and (3) in home interviews of the same type when the firstborn is 8 years old.

Duration: 1969-continuing.

Publications: Information is available from the investigator.

40-SB-1

TOBACCO, ALCOHOL, AND DRUG USE IN BELGIQUE CHILDREN

Investigator(s): Marcel Graffar, Professor, Laboratory of Epidemiology, Faculty of Medicine and Pharmacy, School of Public Health, Free University of Brussels, Brussels, Belgium.

Purpose: To investigate the consumption of tobacco, alcoholic beverages, and drugs among school children in Brussels.

Subjects: 3,000 pupils, ages 12 to 22, in secondary and technical schools in Brussels.

Methods: Anonymous questionnaires were employed to gather data.

Duration: 1973-completed.

40-SB-2

HEALTH AND SERVICE OUTCOMES IN AN ELEMENTARY SCHOOL POPULATION SERVED BY A PRIMARY CARE LINKED SCHOOL HEALTH PROGRAM

Investigator(s): Philip R. Nadar, M.D., Director; and Susan Gilman, M.S.H.A., Research Evaluator, School Health Programs, Medical Branch, University of Texas, 1202 Market Street, Galveston, Texas 77550.

Purpose: To evaluate comprehensive health services offered elementary school children.

Subjects: 800 multiethnic, urban elementary school children in grades kindergarten through 5, selected randomly.

Methods: This is a prospective study of the health care utilization patterns of elementary school children. The health care records of the children are reviewed in order to link separate contacts in the community to episodes of care for specific problems. The type and degree of involvement of a primary care linked school health program will be determined. A profile of the effectiveness of the program (which utilizes nurse practitioners, aides, and outreach health workers) will be determined.

Duration: October 1976-May 1979.

Cooperating group(s): (1) Robert Wood Johnson Foundation. (2) Galveston Independent School District.

40-SD-1

EVALUATION AND FOLLOW-UP OF SELECTED RESPIRATORY, CARDIAC, AND NEUROPHYSIOLOGIC PARAMETERS IN INFANTS FOLLOWING A NEAR MISS EPISODE

Investigator(s): Elliot D. Weitzman, M.D., Chairman and Professor; and Anne Christake Cornwell, Ph.D., Assistant Professor and Director, SIDS Project, Department of Neurology, Montefiore Hospital and Medical Center, 111 East 210th Street, Bronx, New York 10467.

Purpose: To identify and evaluate, under systematically controlled conditions, a population of infants who have survived a *near miss* episode of the typical Sudden Infant Death Syndrome (SIDS), and who are, therefore, presumably high risk potential victims of SIDS.

Subjects: In August 1977 the sample consisted of 31 normal infants: 21 near miss infants, 8 control infants, and 2 siblings, ages 1 to 4 months, matched for age and sex. The criteria for identification of a near miss event are an apneic episode (generally 15 seconds to 1 minute) requiring stimulation and/or resuscitation. The infants may be cyanotic and limp during or immediately after the episode but will then recover with spontaneous breathing with no major detectable neurological deficit.

Methods: Prior to admission, each infant is examined by the pediatric and the neurologic staff. Each baby is readmitted for monthly follow-up examinations and recording sessions up to age 4 months. Neurophysiologic, cardiac, and respiratory monitoring of all infants is carried out, during sleep and waking, for 48 hours. Polygraphic monitoring includes an EEG, chin EMG, EOG, and three respiration measurements. Behavioral activity is also continuously monitored by videotaping as well as direct observation by the recording technician who is present continuously during the recording session. Data are obtained for each baby regarding the infants' birth history, mother's obstetrical history, and developmental and environmental influences in the home. Emphasis is given to any history of SIDS in the family. The major emphasis is to determine whether there is a significant difference in respiratory pattern during sleep in near miss babies, as compared to a control group. The sleep and waking stages are scored, and correlations are made for types of apneic episodes, cardiac rate changes, and sleep-wake stages.

Findings: Results show that during sleep, near miss babies had frequent periods of respiratory pauses as well as apneas lasting 10 seconds or longer. The results also show that different patterns of apneas occur in different babies. In some infants, the apneas are predominantly central; whereas, in others, the apneas are either obstructive or mixed (central followed by obstructive). In these latter cases, the apneas are either accompanied or followed by bradycardia and/or body movements. The diurnal periodicity of these apneas is currently being analyzed in relation to sleep-wake cycles. The relation of apneic episodes and sleep states during different stages of development is also being studied. Data continue to show clear-cut diurnal periodicity of sleep states in infants, age 5 weeks.

Duration: May 1974-continuing.

Cooperating group(s): (1) National Institutes of Health; Public Health Service; U.S. Department of Health, Education, and Welfare. (2) National Foundation for Sudden Infant Death Syndrome. (3) Hospitals in the Greater New York area.

40-SD-2

DEVELOPMENT AND FUNCTION IN OFFSPRING OF ALCOHOLIC MOTHERS

Investigator(s): Ann Pytkowicz Streissguth, Ph.D., Associate Professor; and Ruth E. Little, Sc.D., Research Instructor, Department of Psychiatry and Behavioral Sciences, University of Washington, Seattle, Washington 98195.

Purpose: To study the effects of chronic maternal alcoholism on the health and development of offspring.

Subjects: 50 alcoholic mothers and offspring; 50 recovered alcoholic mothers and offspring; and 50 control mothers and offspring. The three groups were matched on socioeconomic status, education, race, age, parity, drug use, and smoking. Sample selection was made on maternal variables only.

Methods: Age matched offspring were assessed on neuropsychological function (Reitan Battery) including intelligence and achievement testing.

Duration: June 1976-May 1978.

Cooperating group(s): Spencer Foundation.

Publications: Information is available from Dr. Streissguth.

ALCOHOL INTAKE IN PREGNANCY AND OFFSPRING'S DEVELOPMENT

Investigator(s): Ann Pytkowicz Streissguth, Ph.D., Associate Professor; and Joan C. Martin, Ph.D., Associate Professor, Department of Psychiatry and Behavioral Sciences, University of Washington, Seattle, Washington 98195.

Purpose: To study the effects of maternal alcohol, caffeine, and nicotine use on fetal growth; neonatal behavior; and mental, motor, and physical development at 8 and 18 months.

Subjects: 1,500 unselected pregnant women from a wide range of socioeconomic backgrounds were interviewed during pregnancy regarding beverage consumption, smoking, and drug use. A cohort of 250 offspring of heaviest drinkers and smokers and 250 controls were selected for follow-up.

Methods: Neonatal assessment included: Brazelton Neonatal Assessment Scale, two operant learning paradigms (non-nutritive sucking and head turning), naturalistic observations, and dysmorphology exams. Eight- and 18-month follow-ups include: Bayley Scales of Infant Development, behavior ratings, and growth and dysmorphology evaluations.

Findings: Preliminary findings indicate social drinking is related to neonatal behavior growth and dysmorphogenesis.

Duration: October 1974-December 1980.

Cooperating group(s): National Institute on Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U.S. Department of Health, Education, and Welfare.

Publications: Information is available from Dr. Streissguth.

A LONGITUDINAL EVALUATION OF LEAD BODY BURDEN IN GROWING CHILDREN

Investigator(s): A. Harold Lubin, M.D., Director, Pediatric Nutrition, Children's Hospital, 700 Children's Drive, Columbus, Ohio 43205.

Purpose: To evaluate the initial correlation between maternal and cord-blood lead concentrations and the longitudinal changes in blood lead concentration and/or body burden of lead of the infant during the first 2 years of life; and to correlate blood lead levels and sequential determinations of hematological, nutritional, and growth parameters with dietary intake and the amount of exposure to commonly accepted sources of environmental lead.

Subjects: 300 pregnant women, enrolled in the Ohio State University Obstetric Clinic, who have blood lead concentrations greater than 30 μg per ml of whole blood. Pregnant women from other hospitals in Columbus, who live in different areas of the city and who have varied socioeconomic backgrounds, will also be screened and invited to join the study.

Methods: The investigation will include determinations in the pregnant mothers of blood lead level, free erythrocyte protoporphyrin, amino levulinic acid dehydrogenase of the erythrocyte, serum iron, total iron binding capacity, hemoglobin, hematocrit, calcium, and total protein. For infants, at ages 1, 2, 4, 6, 8, 12, 15, 21, and 24 months, the following will be determined: blood lead level, free erythrocyte protoporphyrin, hemoglobin, and hematocrit. At ages 6, 12, 18, and 24 months, additional determinations of serum calcium, serum iron, total iron binding capacity, and total protein will be performed. Lead in the home air, water, and dust, and dietary intake of lead will be assessed. Hematological and biochemical data will be presented in tabular form, and where appropriate, graphically for race, age, and feeding groups with arithmetic means, standard deviations, medians, percentage distributions, and percentiles. Anthropometric data will be presented in tabular form, and where appropriate, graphically for age, sex, race, and feeding groups with arithmetic means, standard deviations, medians, and percentiles. Multivariate analysis of variance and stepwise regression analyses will be used to examine the relations between demographic, anthropometric, biochemical, and dietary variables. Analysis of covariance will be employed using early (1 week, and 3, 6, or 9 month) values as covarying variables with later (12, 18, 24, and 30 months) values. Among variables to be examined will be height, weight, skinfold (standard scores), serum lead, hemoglobin, and serum iron.

Duration: May 1976-January 1979.

Cooperating group(s): (1) Environmental Protection Agency. (2) Children's Hospital Research Foundation.

40-SD-5

DIETARY SUPPLEMENTATION FOR WOMEN EXPECTED TO HAVE LOW BIRTHWEIGHT BABIES

Investigator(s): Ian MacGillivray, Regius Professor; Mary Campbell Brown, Research Fellow; and Doris M. Campbell, Lecturer, Department of Obstetrics and Gynecology, Aberdeen Maternity Hospital, University of Aberdeen, Foresterhill, Aberdeen AB9 2ZD, United Kingdom.

Purpose: To determine the effect of dietary supplementation on women expected to have small babies and on the birthweights of the babies and their subsequent follow up.

Subjects: Primigravidae selected on the basis of height, weight, weight for height, and weight gain.

Methods: Subjects are divided into control and supplement groups. Diets are determined both by weighted dietary survey and by collection of 24-hour urines for estimation of nitrogen. Plasma volume, amino acids, and other measurements are made. Social class and smoking habits are also taken into account.

Findings: A higher proportion of the women than expected have a diet below recommended standards.

Duration: June 1975-Summer 1979.

40-SD-6

EFFECTS OF PRENATAL FACTORS ON DEVELOPMENT DURING THE FIRST 7 YEARS OF LIFE: A LONGITUDINAL COMMUNITY STUDY

Investigator(s): P.S.S. Sundar Rao, Dr.P.H., Professor and Chief, Department of Biostatistics, Christian Medical College and Hospital, Vellore N.A. Tamilnadu, India 632 002.

Purpose: To study the relationship between child health and parental and environmental variables.

Subjects: Approximately 10,000 babies born between 1970 and 1973 who were the liveborn registered in an earlier study entitled "Longitudinal Studies in Human Reproduction."

Methods: Child variables include (1) total mortality and its causes; (2) major morbidity, particularly those of genetic origin; (3) congenital anomalies not detected at birth; (4) indices of physical development - primarily height, weight, head and chest circumferences; and (5) indices of mental development - primarily mental age, intelligence quotient, and social maturation. These five major areas will be studied in relation to the following covariables: (1) consanguinity in the parents; (2) intrauterine growth rates; (3) other prenatal factors such as antenatal care, place of delivery; (4) maternal and paternal characteristics such as age, educational and occupational characteristics; (5) subsequent pregnancies in the mother and their outcome; (6) nutritional and specific environmental factors; and (7) the health service program in the area. Each child is contacted at quarterly intervals until age 7. All interviewers are women who have had basic schooling and some professional education in the field of health. Each interviewer is responsible for a specific geographic area that can be easily managed. Medical personnel required for the project are provided and are supervised through the departments of Child Health and Community Health of the Christian Medical College and Hospital. Data are being transferred to punch cards on a routine basis and will be analyzed by computer.

Duration: 1977-1980.

Cooperating group(s): Indian Council of Medical Research, New Delhi, India.

40-SD-7

LONGITUDINAL STUDY OF MOTHER-CHILD RELATIONSHIPS AND ASPECTS OF CHILD DEVELOPMENT

Investigator(s): Martin P.M. Richards, Ph.D., Lecturer; Judy F. Dunn; and Barbara Antonis, B.Sc.,

Medical Psychology Unit, University of Cambridge, Cambridge, England.

Purpose: To conduct a detailed study of mother-infant interaction; to determine the influence of newborn characteristics on patterns of mother-infant interaction; and to investigate the effect of medical practice on the children and their parents.

Subjects: 100 mothers and their first or second born children during the first year of life.

Methods: One focus of this research is on newborn characteristics as they relate to interaction. During the first year of the study, the influence of the characteristics on feeding, sleeping, and crying patterns was examined. The influence of obstetric medication on mother-infant interaction was also studied.

Duration: Continuing.

Cooperating group(s): (1) Nuffield Foundation. (2) Mental Health Research Fund. (3) Health Education Council. (4) Social Science Research Council. (5) Medical Research Council.

Publications: (1) Richards, M.P.M. A place of safety? An examination of the risks of hospital delivery. In J. Davis and S. Kitzinger (Eds.), *The place of birth*. Oxford, England: Oxford University Press, 1977. (2) Richards, M.P.M. *et al.* Early behavioural differences: Gender or circumcision? *Developmental Psychobiology*, 1976, 9, 89-95.

40-SF-1

CLINIC CONTACT: STAFF, PATIENT, PARENT INTERACTION IN MEDICAL BUREAUCRACIES

Investigator(s): P.M. Strong, M.A., MRC Research Fellow, Medical Sociology Unit, Institute of Medical Sociology, Medical Research Council, Westburn Road, Aberdeen, Scotland; and A.G. Davis, B.A., Lecturer, Department of Sociology, University of Cranfield, Cranfield, England.

Purpose: To investigate the social form of medical encounters with children; and to relate this to technical task and organizational setting.

Subjects: 1,150 consultations recorded in 15 children's clinics run by hospitals and city and state authorities. Both doctors and therapists were observed.

Methods: The principal part of the study was done in a Scottish city with a brief comparative study in an American city. Verbatim records on interactions were made during observations, and interviews were conducted with staff. Analysis of the data was made using a mixture of Glaser's constant comparative methods and analytic induction.

Findings: Six distinct types of role/relationship, or *format*, have been identified and described. The principal format is termed a "Bureaucratic Format." Several distinct types of medical work have been isolated and described.

Duration: 1971-1977.

Cooperating group(s): Social Science Research Council, United Kingdom.

Publications: (1) Strong, P.M. and Davis, A.G. Who's who in paediatric encounters. In A.G. Davis (Ed.), *Rules and routines in doctor-patient encounters*. Teakfield: Saxon House (in press). (2) Strong, P.M. and Davis, A.G. Roles, role formats and medical encounters. *Sociological Review* (in press). (3) Strong, P.M. *Clinic contact* (in draft). (4) Davis, A.G. *Varieties of medical work* (in draft). (5) Strong, P.M. Medical errands. In G. Horobin and A.G. Davis (Eds.), *Medical encounters*. Croomhelm, 1977. (6) Davis, A.G. and Strong, P.M. Therapeutic work as play: The management of therapeutic encounters with young children. In D. Robinson and M. Wadsworth (Eds.), *The sociology of everyday medical life*. Martin Robertson, 1976. (7) Davis, A.G. and Strong, P.M. Aren't children wonderful: The allocation of identity in developmental assessment. In M. Stacey (Ed.), *Sociological Review of Monographs on N.H.S.*, 1976.

40-SF-2

HEALTH EDUCATION DEMONSTRATION RESEARCH PROJECT

Investigator(s): J.R. Toledo, M.D., Health Education Project Director, Children's Heart Program, Driscoll Hospital, 3533 South Alameda, Corpus Christi, Texas 78411.

Purpose: To investigate (1) noncompliance to medical treatment of children's cardiac conditions by low income Mexican-American families, (2) the role played by health education methods used to educate families, and (3) treatment of noncompliance.

Subjects: 100 children with heart problems and their families (primarily Mexican-American). Children had been prescribed either heart catheterization or cardiac surgery. Of the 100 subject families, 81 complied with and 19 did not comply with a proposed treatment plan. (Parents had refused heart catheterization, surgery, or had missed three or more consecutive appointments.)

Methods: A questionnaire was designed based on patient-parent-provider interviews carried out by a multidisciplinary team of physicians, psychologists, anthropologists, and sociologists. Questionnaires were administered to a randomly selected group of parents of children with heart problems. Data from the complying group were compared to data from the noncomplying group using frequency counts and chi-square. An attempt was made to determine parents' common reasons for refusing heart catheterization, surgery, or clinic appointments. The investigator will devise a method of patient screening to spot potential noncompliers and try to prevent them from abandoning treatment.

Duration: July 1976-July 1978.

Cooperating group(s): (1) Southern Methodist University, Anthropology Department. (2) Pan American University, Anthropology Department. (3) North Texas State University, Psychology Department. (4) Administration for Children, Youth, and Families; Office of Human Development Services; U.S. Department of Health, Education, and Welfare.

Publications: Information is available from the investigator.

40-SF-3

SERVICES FOR THE DEVELOPMENTALLY DISABLED: A STUDY OF ASIAN FAMILIES WITHIN A REGIONAL CENTER SYSTEM

Investigator(s): Samuel Q. Chan, Ph.D., Assistant Director of Training in Psychology, University Affiliated Program, Children's Hospital, P.O. Box 54700, Los Angeles, California 90054.

Purpose: To identify critical service utilization factors pertaining to Asian families within the Children's Hospital of Los Angeles Regional Center.

Subjects: 58 developmentally disabled individuals, ages 2 to 60, who are of Asian ancestry and are clients of the Regional Center.

Methods: The Children's Hospital of Los Angeles Regional Center is an institution serving one of the largest Asian communities in the nation. A descriptive investigation was conducted of the precise nature and extent of Asian families' participation in the Regional Center system. Relationships were examined between specific service utilization factors and corresponding demographic, clinical, and cultural variables. Research data were obtained from case records and structured interviews with parents. A cultural orientation scale was constructed and employed as a primary research instrument.

Findings: The results generally support the need for specialized ethnic service agencies, staffed by bilingual-bicultural professionals, which are specifically designed to serve developmentally disabled Asians and their families — particularly in large urban communities with high concentrations of Asian immigrants.

Duration: December 1976-June 1977.

Cooperating group(s): Asian Rehabilitation Services, Inc.

Publications: Information is available from the investigator.

40-SG-1

MENTAL HEALTH SERVICES FOR VIRGINIA'S CHILDREN

Investigator(s): Paul R. Ahr, Ph.D., Assistant Commissioner, Planning, Evaluation and Training; and James A. Sebben, Ed.D., Director, Children's Programs, Virginia State Department of Mental Health and Mental Retardation, P.O. Box 1797, Richmond, Virginia 23214.

Purpose: To examine types and costs of mental health services for children and adolescents in the Commonwealth of Virginia.

Subjects: Institutional, community, and private residential programs providing services to children and adolescents.

Methods: The study was both expository and problem solving in its orientation; i.e., potential alternatives for treatment were examined. Interviews were conducted with, and questionnaires were mailed to, staffs of institutional, community, and private residential programs.

Findings: Gaps were identified in service delivery for emotionally disturbed and mentally ill children and adolescents.

Duration: June 1975-completed.

Cooperating group(s): Private citizens, private practitioners, and Departments of Health, Education, Welfare, and Corrections.

40-SG-2

MENTAL HEALTH SERVICES FOR CHILDREN

Investigator(s): John Salasin, Ph.D., METREK Division, The MITRE Corporation, 1820 Dolley Madison Boulevard, McLean, Virginia 22101.

Purpose: To identify areas of research that the NIMH Mental Health Services Development Branch might best pursue to improve mental health services for children at the local level; to document effective techniques for providing the services; and to suggest ways of overcoming major barriers to implementing the services.

Subjects: 50 mental health experts.

Methods: The mental health experts were queried in a survey conducted by the National Institute of Mental Health and the METREK Division of the MITRE Corporation. They were asked such questions as: What needs of children should be addressed by mental health services? What services should be developed or improved to meet these needs? What barriers currently hinder the delivery of mental health services for children?

Findings: The results of the survey are compiled in a report that does not recommend a single course of action but highlights agreements and disagreements among experts and references sources of information that the respondents indicated are useful to develop services for children.

Duration: Completed.

Publications: A 131-page report: *Challenges for children's mental health services*, 1977. Available from: The MITRE Corporation, METREK Division, Mail Stop W-010, 1820 Dolley Madison Boulevard, McLean, Virginia 22101. Order MTR-7480; Price, \$6.00.

INSTITUTION INDEX

- Aberdeen University, Aberdeen, Scotland. Aberdeen Maternity Hospital, Department of Obstetrics and Gynecology. 40-SD-5
- Adelaide University, Adelaide, South Australia. Department of Restorative Dentistry; Department of Oral Biology. 40-AA-23
- American Institutes of Research, Palo Alto, California. 40-CA-3, 40-GE-3
- Arrowhead Regional Community Corrections, Duluth, Minnesota. 40-KE-1
- Augusta College, Augusta, Georgia. Department of Psychology. 40-DD-10
- Beaver College, Glenside, Pennsylvania. Department of Psychology. 40-PB-5
- Berkeley Pediatric Group, Berkeley, California. 40-EA-1, 40-JD-1
- Birmingham University, Birmingham, England. Faculty of Education, Centre for Child Study. 40-QF-2
- Board of Education for the Borough of North York, Toronto, Ontario, Canada. 40-DD-9
- Bridgeport University, Bridgeport, Connecticut. Department of Psychology. 40-MB-1
- British Medical Research Council, Cambridge, England. Applied Psychology Unit. 40-GD-1
- British Medical Research Council, London, England. Developmental Psychology Unit. 40-GC-6
- Charles Burns Clinic, Birmingham, West Midlands, England. 40-JE-2
- Burt Associates, Inc., Bethesda, Maryland. 40-LF-2
- Burwood State College, Burwood, Victoria, Australia. Institute of Special Education. 40-GC-2
- Calgary University, Calgary, Alberta, Canada. Faculty of Medicine, Division of Community Health Science; Faculty of Business. 40-RH-4
- California Polytechnic State University, San Luis Obispo. Social Sciences Department. 40-KH-1
- California State College, Sonoma. Department of Special Education. 40-HH-1
- California University, Berkeley. Department of Anthropology. 40-NG-4
- California University, Berkeley. Institute of Human Development. 40-AA-4, 40-DB-16
- California University, Berkeley. School of Education; School of Law. 40-FA-7
- California University, Berkeley. School of Public Health. 40-AA-3
- California University, Irvine. Program in Social Ecology. 40-LA-2
- California University, Los Angeles. Center for Health Sciences. 40-CG-3
- California University, Los Angeles. Department of Psychiatry. 40-JE-1
- California University, Los Angeles. Department of Psychology. 40-DF-5
- California University, Los Angeles. Department of Psychology, Rodnick-Goldstein Family Project. 40-JF-1
- California University, Los Angeles. Neuropsychiatric Institute, Child Outpatient Department. 40-DG-6, 40-NA-2
- California University, San Francisco. Department of Otolaryngology. 40-GC-1
- Cambridge University, Cambridge, England. Medical Psychology Unit. 40-SD-7
- Canterbury University, Christchurch, New Zealand. Education Department. 40-DC-1, 40-DC-2, 40-OG-4
- Case Western Reserve University, Cleveland, Ohio. School of Medicine. 40-AA-7
- Case Western Reserve University, Cleveland, Ohio. University Hospitals; School of Medicine. 40-CA-1, 40-CB-1
- Center for the Study of Parent Involvement, Oakland, California. 40-OJ-1
- Chedoke Hospitals, Hamilton, Ontario, Canada. Department of Psychology. 40-DH-3
- Child Guidance Clinic, Reading, Berkshire, England. 40-QF-2
- Children's Hospital, Columbus, Ohio. Department of Pediatric Nutrition. 40-GE-6, 40-SD-4
- Children's Hospital, Los Angeles, California. University Affiliated Program. 40-SF-3
- Children's Hospital of Eastern Ontario, Ottawa, Ontario, Canada. 40-CA-2
- Children's Hospital of Philadelphia, Pennsylvania. University of Pennsylvania Cancer Center, Children's Research Center. 40-GF-1
- Children's Memorial Hospital, Chicago, Illinois. 40-LG-1
- Children's Memorial Hospital, Chicago, Illinois. Division of Child Psychiatry. 40-JB-2
- Child Welfare League of America, Inc., New York, New York. 40-RB-1
- Christian Medical College and Hospital, Vellore, N.A. Tamilnadu, India. Department of Biostatistics. 40-SD-6
- Clarke Institute of Psychiatry, Toronto, Ontario, Canada. Child and Adolescent Service. 40-JB-1

- Clarke Institute of Psychiatry, Toronto, Ontario, Canada. Research Section of Psychophysiology. 40-DG-2
- Colorado University, Boulder. Department of Psychology. 40-DH-5, 40-DH-6
- Columbia University, New York, New York. Teachers College. 40-IA-2
- Columbia University, New York, New York. Teachers College, Research and Demonstration Center. 40-HC-1
- Community Council of Greater New York, New York. Budget Standard Service. 40-R1-1
- Concordia University, Montreal, Quebec, Canada. Sir George Williams Faculty of Arts. 40-OG-1
- Cornell University, Ithaca, New York. Consortium on Developmental Continuity, Department on Community Service Education. 40-OF-3
- Cornell University, Ithaca, New York. Department of Human Development and Family Studies. 40-FA-1, 40-LA-3
- Cornell University, Ithaca, New York. Department of Psychology. 40-DG-5
- Cornell University, Ithaca, New York. Division of Nutritional Sciences. 40-CE-2
- Cornell University, Ithaca, New York. N.Y.S. College of Human Ecology. 40-LA-2
- CPI Associates, Inc., Dallas, Texas. 40-RH-1
- CPI Associates, Inc., Washington, D.C. 40-RH-1
- Cranfield University, Cranfield, England. Department of Sociology. 40-SF-1
- Creighton University, Omaha, Nebraska. School of Medicine. 40-GE-9
- Creighton University, Omaha, Nebraska. School of Medicine, Meyer Children's Rehabilitation Institute. 40-LG-3
- Delaware University, Newark. College of Home Economics. 40-DG-4
- Denver University, Colorado. School of Arts and Sciences. 40-DH-6
- Driscoll Hospital, Corpus Christi, Texas. Children's Heart Program. 40-SF-2
- Duke University, Durham, North Carolina. Medical Center, Division of Child Psychiatry, Department of Psychiatry. 40-JC-1
- Eastern Michigan University, Ypsilanti. Foster Parent Training Project. 40-RE-1
- East London Child Guidance Clinic, England. 40-JI-1
- Educational Testing Service, Princeton, New Jersey. 40-FD-1
- Education Commission of the States, Denver, Colorado. 40-AA-10, 40-OF-3
- Elkhart Community Schools, Indiana. 40-DD-3
- Philippa Fawcett College, London, England. Schools Council Project. 40-QD-1
- Fels Research Institute for the Study of Human Development, Yellow Springs, Ohio. 40-AA-1
- Foundation Center of Biological Studies on Growth and Development of the Venezuelan Population, Caracas, Venezuela. 40-BA-1
- Foundation for Child Development, New York, New York. 40-NA-1
- Simon Fraser University, Burnaby, B.C., Canada. Department of Psychology. 40-DH-8, 40-FA-10
- Frederick County Board of Education, Frederick, Maryland. Parent-Child Home Visitation Program. 40-MC-3
- Free University of Brussels, Belgium. School of Public Health, Faculty of Pharmacy and Medicine. 40-SB-1
- Gateways Hospital, Los Angeles, California. Hyperkinetic Children's Clinic. 40-JC-2
- Georgia University, Athens. Institute for Behavioral Research. 40-NF-1
- Glasgow University, Glasgow, Scotland. Department of Education. 40-NG-3
- Göteborg University, Mölndal, Sweden. Department of Educational Research. 40-PB-3
- Hahnemann Community Mental Health/Mental Retardation Center, Philadelphia, Pennsylvania. Consultation and Education Services. 40-HH-3
- Haifa University, Haifa, Israel. School of Education. 40-FA-9, 40-OA-1
- Harlandale School District, San Antonio, Texas. 40-QH-1
- Harvard University, Cambridge, Massachusetts. Graduate School of Education. 40-DB-8
- Harvard University, Cambridge, Massachusetts. Graduate School of Education, Laboratory of Human Development. 40-AA-15
- Helen Hayes Hospital, West Haverstraw, New York. Biomechanics Research Unit. 40-GA-1
- Howard University, Washington, D.C. School of Education. 40-OF-4
- Illinois State University, Normal. Department of Information Sciences. 40-DH-1

Illinois University, Chicago. Department of Psychology.	40-FE-8	Lund University, Lund, Sweden. Psychological Laboratory.	40-CD-1
Illinois University, Chicago. Medical Center, Center for Craniofacial Anomalies.	40-AA-9	McMaster University, Hamilton, Ontario, Canada. Department of Psychiatry.	40-DH-3
Illinois University, Urbana-Champaign. Institute for Child Behavior and Development.	40-QF-1	Macquarie University, North Ryde, New South Wales, Australia. School of Behavioral Sciences.	40-LA-4
Indiana State University, Terre Haute. Department of Special Education.	40-DD-3	Maharaja Sayajirao University, Baroda, Gujarat, India. Faculty of Home Science, Department of Child Development.	40-EC-1, 40-PA-2, 40-PB-4, 40-PB-6
Indiana University, Bloomington. Institute for Child Study; Smith Research Center.	40-DB-5	M.A. Medical College, New Delhi, India. Department of Pediatrics.	40-CE-1
International Management Systems, Kansas City, Missouri.	40-JE-3	Massachusetts Institute of Technology, Cambridge. Research Laboratory of Electronics; Speech Communication Group.	40-AA-14
Iowa State University, Ames. Department of Child Development.	40-OB-1	Massachusetts University, Amherst. Department of Psychology.	40-FE-1
Johns Hopkins University, Baltimore, Maryland. School of Medicine.	40-GE-4	Mathematica Policy Research, Princeton, New Jersey.	40-OF-5
Johns Hopkins University, Baltimore, Maryland. School of Medicine, John F. Kennedy Institute.	40-CG-1	Medical College of Ohio, Toledo. Department of Neurosciences.	40-CC-6, 40-CC-7, 40-QF-5
Kaiser Foundation Hospital, Oakland, California. Department of Pediatrics; Department of Obstetrics and Gynecology.	40-AA-3	Medical College of Virginia, Richmond. Department of Pediatrics.	40-CA-5
Kansas University, Kansas City. Medical Center.	40-GC-3	Medical Research Council, Aberdeen, Scotland. Institute of Medical Sociology, Medical Sociology Unit.	40-AA-24, 40-SF-1
Karolinska Institutet, Stockholm, Sweden. Department of Pediatrics.	40-CH-1	Melbourne State College, Melbourne, Victoria, Australia. Department of Psychology.	40-OH-1, 40-OK-1
Kean College of New Jersey, Union. Department of Communication Science.	40-DF-2	Melbourne University, Parkville, Victoria, Australia. Department of Education.	40-OF-1
Kent County Council, Kent, England.	40-AA-18	Merrill-Palmer Institute, Detroit, Michigan. Program Development.	40-RF-1
Kent State University, Kent, Ohio. Department of Psychology.	40-DD-1	Miami University, Oxford, Ohio. Department of Educational Psychology.	40-DB-9, 40-DB-10, 40-DB-11, 40-DB-12, 40-DB-13, 40-DB-14, 40-DB-15, 40-DD-5, 40-DD-6, 40-DD-7, 40-DG-3
Lancaster University, Lancaster, England. Department of Educational Research.	40-OA-3	Michigan University, Ann Arbor. Institute for Social Research, Research Center for Group Dynamics.	40-AA-20, 40-LC-2, 40-QH-2
Leeds University, Leeds, England. School of Education.	40-PB-2	Ministry of Health, Toronto, Ontario, Canada.	40-DH-3
Lexington School for the Deaf, Jackson Heights, New York. Research and Evaluation.	40-GE-5	Minnesota University, Duluth. Department of Special Education.	40-KE-1
Loma Linda University, Loma Linda, California. Department of Pediatric Nephrology; Department of Biostatistics and Epidemiology.	40-CA-3	Minnesota University, Minneapolis. Department of Sociology.	40-FA-6, 40-NG-4
London Hospital Medical College, England.	40-JI-1	Minnesota University, Minneapolis. Institute of Child Development.	40-DB-7, 40-DG-1, 40-FA-4, 40-FA-5
London School of Economics, England. Medical Research Council. Unit for the Study of Environmental Factors in Mental and Physical Illness.	40-SA-3		
London University, England. Institute of Education; English Department.	40-OA-7		

Missouri University, St. Louis. Graduate School; Office of Research.	40-AA-21	North Carolina University, Chapel Hill. School of Medicine, Department of Medical Allied Health Professions, Division of Physical Therapy.	40-GB-1
MITRE Corporation, McLean, Virginia. METREK Division.	40-SG-2	North Dakota University, Grand Forks. Department of Psychology; Department of Education.	40-QF-4
Montefiore Hospital and Medical Center, Bronx, New York. Department of Neurology.	40-SD-1	Northern Illinois University, DeKalb. Department of Psychology.	40-DF-3
Mt. Holyoke College, South Hadley, Massachusetts. Department of Psychology and Education.	40-DD-11	Northern Iowa University, Cedar Falls. Educational Clinic.	40-OK-2
National Association for Creative Children and Adults, Cincinnati, Ohio.	40-IA-3	Northwestern University, Evanston, Illinois. School of Speech; Department of Linguistics; School of Education.	40-DH-4
National Center for Health Statistics (DHEW), Washington, D.C.	40-AA-7	Novato Unified School District, Novato, California.	40-EB-2
National Council of Research, Rome, Italy.	40-DH-5	Oberlin College, Oberlin, Ohio. Department of Psychology.	40-DB-4
National Institute of Child Health and Human Development (DHEW), Bethesda, Maryland.	40-AA-7	Oklahoma State University, Stillwater. Department of Psychology; Department of Family Relations and Child Development; Department of Sociology.	40-OK-3
National Institute of Mental Health (DHEW), Adelphi, Maryland. Mental Health Study Center.	40-LG-3	Ontario Institute for Studies in Education, Toronto, Ontario, Canada.	40-DA-1
National Institute of Mental Health (DHEW), Bethesda, Maryland. Adult Psychiatry Branch, Section on Twin and Sibling Studies.	40-AA-12	Oregon Research Institute, Eugene.	40-KR-1
National Institute of Neurological and Communicative Disorders and Stroke (DHEW), Bethesda, Maryland.	40-AA-11	Oregon University, Portland. Health Sciences Center, Genetics Clinic.	40-CA-4, 40-GF-3
National Urban League, Inc., New York, New York. Project THRIVE.	40-RH-7	Oregon University, Portland. Health Sciences Center, School of Dentistry; Child Study Clinic.	40-AA-6
Nebraska University, Omaha. Medical Center; Meyer Children's Rehabilitation Institute.	40-GE-9	Pacific Oaks College, Pasadena, California. Graduate School.	40-OA-6
New York City College of the City University, New York. Department of Psychology.	40-PB-1	Papua New Guinea University of Technology, Lae, Papua, New Guinea. Mathematics Department.	40-PA-5
New York State Education Department, Albany. Prekindergarten Evaluation Unit.	40-OA-4	George Peabody College for Teachers, Nashville, Tennessee. DARCEE; Kennedy Center.	40-MC-2
New York State University, Albany. Department of Psychology.	40-DB-17	Pennsylvania State University, University Park. School Psychology Program.	40-DA-2
New York State University, Buffalo. Department of Psychology.	40-CC-5	Philadelphia Child Guidance Clinic, Pennsylvania. Research and Evaluation.	40-KH-2
New York State University, New York. College of Optometry.	40-CC-1	Philadelphia School District, Pennsylvania. Office of Research and Evaluation.	40-OA-8
North Carolina University, Chapel Hill. Child Development Research Institute, Division for Disorders of Development and Learning.	40-HH-2	Pittsburgh University, Johnstown, Pennsylvania. Division of Education.	40-OG-2
North Carolina University, Chapel Hill. Department of Anthropology.	40-NG-1	Pittsburgh University, Pittsburgh, Pennsylvania. Learning Research and Development Center.	40-PA-1
		Pittsburgh University, Pittsburgh, Pennsylvania. School of Medicine, Department of Otolaryngology; Division of Audiology.	40-SA-2

Pitzer College, Claremont, California. Department of Psychology.	40-CG-3	San Francisco State University, California. Department of History.	40-MA-1
Port Washington Schools, Port Washington, New York.	40-LC-1	Schools' Council, London, England. Project on the Structuring of Play in Infant/First School.	40-OA-2
Puerto Rican Department of Social Services, Santurce, Puerto Rico. Health and Social Studies, Inc.	40-RH-3	Scottish Council for Research in Education, Edinburgh, Scotland.	40-MC-1
Purdue University, West Lafayette, Indiana. Department of Education, Special Education Section.	40-DD-4	Sheffield University, Sheffield, England. Department of Psychology.	40-OE-1
Purdue University, West Lafayette, Indiana. Institute for Consumer and Family Sciences.	40-LA-5	South Alabama University, Mobile. Department of Sociology.	40-LG-2
Purdue University, West Lafayette, Indiana. Psychological Services.	40-DB-3	South Bend Community School Corporation, Indiana.	40-DD-8
Quebec University, Montreal, Quebec, Canada. Department of Psychology.	40-FA-10	South Carolina University, Columbia. Department of Sociology.	40-LA-1
Queensland University, St. Lucia, Brisbane, Queensland, Australia. Fred and Eleanor Schonell Educational Research Centre.	40-OA-5, 40-OG-3	Southern California University, Los Angeles. Annenberg School of Communications.	40-FE-2
Radford College, Radford, Virginia. Department of Psychology.	40-QF-6	Southern California University, Los Angeles. Annenberg School of Communications; School for Early Childhood Education.	40-LA-6
Randolph-Macon Woman's College, Lynchburg, Virginia. Department of Anthropology/Sociology.	40-NF-2, 40-NF-3	Southern California University, Los Angeles. School of Medicine, Children's Cancer Study Group.	40-AA-22
Reiss-Davis Child Study Center, Los Angeles, California.	40-AA-17	Southwest Educational Development Laboratory, Austin, Texas. Learning and Media Research Project.	40-FE-7
Research Centre for the Education of the Visually Handicapped, Edgbaston, Birmingham, England.	40-GC-4, 40-GC-5, 40-GE-7	Spaulding Youth Center, Tilton, New Hampshire.	40-JE-3
Rochester University, New York. Department of Psychology.	40-LF-1	Stanford University, Stanford, California. Department of Sociology.	40-FA-2
Rochester University, New York. Department of Psychology; Primary Mental Health Project.	40-AA-13	Stanford University, Stanford, California. Medical Center, Department of Psychiatry and Behavioral Science.	40-FE-3
Rutgers University, New Brunswick, New Jersey. Douglass College, Department of Psychology.	40-DH-2	Stanford University, Stanford, California. School of Education.	40-DB-6
Rutgers University, New Brunswick, New Jersey. School of Psychology.	40-DB-15	Surrey University, Guildford, Surrey, England. Department of Psychology.	40-MA-2
Sacramento Medical Center, California. Division of Mental Health.	40-RH-6	Sydney University, Sydney, Australia. Department of Education.	40-RH-5
St. Lawrence's Hospital, Caterham, Surrey, England.	40-GF-2	Syracuse University, New York. College for Human Development.	40-DH-7
St. Louis County Special School District, Missouri.	40-GE-1	Syracuse University, New York. Division of Special Education and Rehabilitation.	40-DB-1
St. Thomas's Hospital, London, England. School of Medicine, Department of Clinical Epidemiology and Social Medicine.	40-AA-18	Henrietta Szold Institute, Kirjat Menachem, Jerusalem, Israel.	40-OF-2
		Tel-Aviv University, Tel-Aviv, Ramat Aviv, Israel. School of Education.	40-DE-1, 40-OA-1
		Temple University, Philadelphia, Pennsylvania. Department of Psychology.	40-EB-1
		Texas Research Institute of Mental Sciences, Houston.	40-KP-1

- Texas Tech University, Lubbock. Department of Home and Family Life/Child Development and Family Relations. 40-FA-8
- Texas University, Austin. Department of Psychology. 40-CC-2, 40-CC-3
- Texas University, Austin. School of Social Work, Center for Social Work Research. 40-RH-2
- Texas University, Dallas. Health Science Center, University Affiliated Center for Developmentally Disabled Children. 40-CC-4
- Texas University, Galveston. Medical Branch, Department of Neurology and Neuropsychiatry. 40-EF-1
- Texas University, Galveston. Medical Branch, Department of Psychiatry and Behavioral Sciences, Division of Child and Adolescent Psychiatry. 40-DD-2
- Texas University, Galveston. Medical Branch, School Health Programs. 40-SB-2
- Texas University, San Antonio. Department of Special Education. 40-QH-1
- Tokyo University, Tokyo, Japan. Faculty of Education. 40-DB-6
- Toronto University, Toronto, Ontario, Canada. Institute of Child Study, Faculty of Education. 40-DH-9
- Trieste University, Trieste, Italy. 40-DH-5
- Tufts University, Medford, Massachusetts. Eliot-Pearson Department of Child Study. 40-FA-3
- C.D. Udaipur University, Rajasthan, India. 40-EC-1
- Union College, Schenectady, New York. Character Research Project. 40-AA-8
- United Hospitals of Newark, New Jersey. Family Life Education Center. 40-RH-8
- U.S. Department of Agriculture, Hyattsville, Maryland. Consumer and Food Economics Institute, Agricultural Research Service. 40-AA-2
- Utah University, Salt Lake City. College of Education. 40-DB-2
- Vanderbilt University, Nashville, Tennessee. Committee on Linguistics. 40-FE-4, 40-FE-5, 40-FE-6
- Vanderbilt University, Nashville, Tennessee. Department of Psychology. 40-AA-16
- Vermont University, Burlington. Medical Center Hospital of Vermont, De Goebsbriand Unit, Outpatient Psychiatry Service. 40-QF-3
- Veterans Administration, Los Angeles, California. Neurobiochemistry Laboratory. 40-JE-1
- Virginia Polytechnic Institute and State University, Blacksburg. College of Architecture. 40-CG-2
- Virginia Polytechnic Institute and State University, Blacksburg. Department of Psychology. 40-QF-6
- Virginia Polytechnic Institute and State University, Blacksburg. Geography Department. 40-NE-1
- Virginia State Department of Mental Health and Mental Retardation, Richmond. Children's Programs. 40-SG-1
- Virginia University, Charlottesville. Children's Rehabilitation Center; Department of Child and Adolescent Psychiatry. 40-GE-8
- Waikato University, Hamilton, New Zealand. Department of Psychology. 40-NE-2, 40-NG-2
- Washington University, Seattle. Department of Educational Psychology; School of Nursing. 40-SA-1
- Washington University, Seattle. Department of Psychiatry and Behavioral Sciences. 40-SD-2, 40-SD-3
- Webster College, Brooks Air Force Base, Texas. Base Education Office. 40-IA-1
- Welfare Research, Inc., Albany, New York. 40-KC-1, 40-RD-1, 40-RD-2, 40-RD-3, 40-RE-2
- Wellington Department of Education, Wellington, New Zealand. IEA International Coordinating Unit. 40-PA-3
- Western Kentucky University, Bowling Green. Department of Education. 40-QF-2
- Wisconsin University, Madison. Department of Landscape Architecture. 40-NE-1
- Wisconsin University, Madison. Department of Landscape Architecture; Department of Child and Family Studies; Department of Environment and Design. 40-CG-2
- Wisconsin University, Madison. Research and Guidance Laboratory. 40-AA-19
- Wisconsin University, Madison. Wisconsin Vocational Studies Center. 40-GE-2
- Wisconsin University, River Falls. Department of Sociology. 40-NG-4
- Women's Research Institute of Wisconsin, Inc., Madison. 40-PA-4
- Yeshiva University, Bronx, New York. Albert Einstein College of Medicine. 40-AA-5
- York University, Downsview, Ontario, Canada. Department of Psychology. 40-DF-1, 40-DF-4

INVESTIGATOR INDEX

Accardo, Pasquale J.	40-CG-1	Brown, Tasman	40-AA-23
Acosta, Luz N.	40-RH-3	Brownell, Celia A.	40-FA-4, 40-FA-5
Adams, Perrie	40-EF-1	Brummitt, Jack R.	40-RH-4
Aery, Shaila	40-OK-3	Bullowa, Margaret	40-AA-14
Ahmann, J. Stanley	40-AA-10	Bundy, Robert S.	40-CC-5
Ahr, Paul R.	40-SG-1	Burgess, A.	40-OA-7
Alanen, Arnold R.	40-NE-1	Burke, David	40-CG-2
Alexander, Ronnie N.	40-QH-1	Burns, Ailsa M.	40-LA-4
Altman, Douglas	40-AA-18	Burt, Marvin R.	40-LF-2
Ambrosino, Robert J.	40-RD-3		
Antonis, Barbara	40-SD-7	Cairns, Nancy U.	40-GC-3
Apolloni, Tony	40-HH-1	Camaioni, Luigia	40-DH-5
Appelbaum, Alan S.	40-DD-2	Campbell, Bruce A.	40-NF-1
Arora, Chandra	40-PB-4	Campbell, Doris M.	40-SD-5
Atwell, Constance W.	40-CG-3	Campbell, Suzann K.	40-GB-1
Azuma, Hiroshi	40-DB-6	Capute, Arnold J.	40-CG-1
		Carleton, Raymond	40-DD-6
Babow, Irving P.	40-KH-1	Carney, Christina	40-OA-6
Baker, A.	40-OA-2	Carroll, Storm	40-KE-1
Baker, Carol	40-FA-3	Castellano, Hernán Méndez	40-BA-1
Bandmann, Ylva	40-CD-1	Champagne, Mireille	40-DF-4
Banks, Jean	40-QF-2	Chan, Samuel Q.	40-SF-3
Banks, Martin S.	40-CC-2, 40-CC-3	Chapman, E.K.	40-GE-7
Barnard, Kathryn E.	40-SA-1	Cochran, George Van B.	40-GA-1
Barratt, Ernest S.	40-EF-1	Cohen, Donald	40-AA-12
Bates, Elizabeth	40-DH-5, 40-DH-6	Cook, Judith	40-AA-18
Beagles, Jessica Keown	40-DF-5	Cooke, Thomas P.	40-HH-1
Belsky, Jay	40-FA-1	Cooley, William W.	40-PA-1
Benigni, Laura	40-DH-5	Corder-Bolz, Charles R.	40-FE-7
Bennett, Neville	40-OA-3	Cornwell, Anne Christake	40-SD-1
Benson, Charles S.	40-FA-7	Cortez, Edmund L.	40-GE-5
Berens, Anne	40-DH-3	Coward, Raymond T.	40-LA-5
Berlin, Irving N.	40-RH-6	Cowen, Emory L.	40-AA-13
Bilsky, Linda H.	40-HC-1	Cram, Penny	40-FA-3
Birns, Beverly	40-AA-5	Cromer, Richard F.	40-GC-6
Bixley, Matilda B.	40-DG-4	Crowley, J.	40-CA-5
Black, Kathryn N.	40-DB-3	Cunningham, Jr., Perry H.	40-RH-4
Blackman, Leonard S.	40-HC-1		
Blakeley, Richard	40-CG-2	Dalglish, M.	40-OE-1
Bonner, Judy	40-GE-6	D'Angio, Giulio J.	40-GF-1
Bosse, Barbara F.	40-SA-2	David, R.	40-CA-5
Boucher, Jill	40-JE-2	Davis, A.G.	40-SF-1
Boyd, Terry	40-CG-2	Dawson, R.L.	40-QD-1
Bradley, Charles	40-RE-2	DeFilippis, Nick A.	40-DD-10
Bretherton, Inge	40-DH-5	Derman, Richard	40-GA-1
Bridger, Wagner H.	40-AA-5	Derman-Sparks, Louise	40-OA-6
Britton, Virginia	40-AA-2	DeSantis, Darlene	40-GB-1
Brooker, Barry	40-DC-2	Dhawan, Gita	40-PA-2
Brown, Mary Campbell	40-SD-5	Dibble, Eleanor	40-AA-12
Brown, Stephen W.	40-IA-1	Di Campli, Maria	40-OH-1

Dickerson, John N.	40-DD-8	Gibson, Eleanor J.	40-DG-5
Dickson, Juanita B.	40-OE-2	Gilman, Susan	40-SB-2
Dixon, Johanne C.	40-RH-7	Githens, Penny	40-DB-5
Dobson, Phillipa	40-OG-4	Glaser, Robert	40-PA-1
Docherty, Jed	40-DB-15	Gold, Dolores	40-OG-1
Dorr, D.A.	40-AA-13	Gold, Martin	40-OH-2
Dowdell, Natalie	40-RH-7	Golding, Ellen	40-FA-3
Drage, Joseph S.	40-AA-11	Goldrich, Stanley G.	40-CC-1
Draper, D.	40-CA-5	Goldstein, Michael J.	40-JF-1
Duncan, Ann Dell	40-JE-3	Goldstein, Jr., Moise H.	40-GE-4
Duncan, Greg	40-AA-20	Goodman, Marvin	40-DD-9
Duncan, Thomas	40-MC-3	Goodwin, Judith	40-OA-8
Dunn, Judy F.	40-SD-7	Graffar, Marcel	40-SB-1
Eagen, Carol S.	40-DB-1	Grant, Sister Doreen	40-NG-3
Eichorn, Dorothy H.	40-AA-4	Gray, Carol Ann	40-SA-1
Ekstein, Rudolf	40-AA-17	Green, Jr., Donald W.	40-LG-2
Elbard, Heather	40-DH-3	Greenfield, Patricia Marks	40-DF-5
Elliott, A.	40-AA-18	Green-Nealey, Vicki	40-OK-3
Epstein, Howard	40-DD-7	Greiner, Ted	40-CE-2
Eron, Leonard D.	40-FE-8	Greulich, William W.	40-AA-7
Eson, Morris E.	40-DB-17	Grimley, Liam K.	40-DD-3
Evans, Mary	40-QD-1	Grimmett, Sadie A.	40-DB-5
Eyres, Sandra	40-SA-1	Grossman, Gene	40-KE-1
Falkner, Frank	40-AA-1	Gundlach, Robert	40-DH-4
Farber, Irvin J.	40-OA-8	Guptā, Satya	40-CE-1
Farris, Buford	40-RH-1	Haines, Linda	40-JE-3
Feldman, Harold	40-LA-3	Hall, Amanda P.	40-GE-3
Feldman, Robert S.	40-FE-1	Hallinan, Maureen T.	40-FA-2
Field, Dorothy	40-DB-16	Halperin, Stewart	40-GE-1
Fine, Gary Alan	40-FA-6	Hammer, Ed	40-CC-4
Firestone, Philip	40-CA-2	Hammond, Denman	40-AA-22
Firestone, William	40-RH-1	Harris, Abigail M.	40-FD-1
Flanzraich, Mark J.	40-RH-8	Harris, Harold J.	40-JC-1
Fjint, David L.	40-OA-4	Harris, Ralph D.	40-CA-3
Forbes, Roy	40-AA-10	Hartup, Willard W.	40-FA-4, 40-FA-5
Francis, Hazel	40-PB-2	Hayden, Shelby	40-RB-1
Franken, Marion E.	40-GE-2	Hays, J. Ray	40-KP-1
French, Doran C.	40-FA-4, 40-FA-5	Healey, Kathryn N.	40-HH-3
French, Joseph L.	40-DA-2	Hecht, Frederick	40-CA-4, 40-GF-3
Freschi, David	40-JE-3	Henry, M.B.	40-OA-5, 40-OG-3
Friedman, Seymour W.	40-AA-17	Herman, Carole	40-OA-6
Friedman, William J.	40-DB-4	Hertz-Lazarowitz, Rachel	40-FA-9, 40-OA-1
Gaines, Rosslyn	40-DG-6, 40-NA-2	Hess, Robert D.	40-DB-6
Gainey, Janet	40-GA-1	Hick, Thomas L.	40-OA-4
Galante, Margaret B.	40-LC-1	Hills, Michael D.	40-NE-2
Gardner, Howard	40-DB-8	Hochaus, Larry	40-OK-3
Garrett, Alice W.	40-GA-1	Hofmann, Lydia R.	40-DD-6
Gelcer, E.	40-JB-1	Hofmann, Richard J.	40-DB-9, 40-DB-10, 40-DB-11, 40-DB-12, 40-DB-13, 40-DB-14, 40-DB-15, 40-DD-5, 40-DD-6, 40-DC-7, 40-DG-3
Geller, Carol A.	40-QF-6		
Geller, E.	40-JE-1		
Geller, E. Scott	40-QF-6		

Holland, W.W.	40-AA-18	Latham, Michael	40-CE-2
Hornel, R.	40-LA-4	Lauderdale, Michael	40-RH-2
Honig, Alice S.	40-DH-7	Lavigne, John V.	40-LG-1
Honigmann, John J.	40-NG-1	Lazar, Irving	40-OF-3
Hopkinson, Norma T.	40-SA-2	Leggett, Sandra H.	40-SA-2
Horan, Mary D.	40-OA-4	Leighton, Liane	40-LC-1
Hostler, Sharon	40-GE-8	Lenhardt, M.	40-CA-5
Hrcir, Elizabeth	40-FA-8	Lerman, Alan	40-GE-5
Hubbell, Virginia Ruth	40-OF-3	Levine, Raphael	40-GA-1
Huesmann, L. Rowell	40-FE-8	Lewis, Ralph L.	40-DD-3
Huessy, Hans R.	40-QF-3	Lieberman, Louis	40-KC-1
Huskey, Robert	40-GE-1	Ligon, Ernest M.	40-AA-8
Hwang, Chien-hou	40-NF-3	Lincoln, Ann	40-DB-3
		Linden, Pepi	40-GE-8
Illick, Joseph E.	40-MA-1	Lisle, J.	40-QF-2
Illsley, Raymond	40-AA-24	Litowitz, Bonnie	40-DH-4
Insel, Paul M.	40-CA-3	Little, Ruth E.	40-SD-2
Irvine, David J.	40-OA-4	Littrell, Boyd	40-RH-1
Isaacs, Ann Fabe	40-IA-3	Lockheed, Marlaine E.	40-FD-1
Izzo, I.D.	40-AA-13	Lovett Doust, J.W.	40-DG-2
		Lubin, A. Harold	40-GE-6, 40-SD-4
Jacobson, John W.	40-MB-1		
James, Sharon L.	40-DB-1	McCail, Gail	40-MC-1
Janke, Mary Koch	40-DF-3	McCall, Robert	40-AA-1
Jennings, Percy H.	40-EA-1, 40-JD-1	McCullers, John C.	40-OK-3
Johnson, D. Lamont	40-QF-4	MacGillivray, Ian	40-SD-5
Johnson, George	40-AA-10	McGowan, John	40-RD-1, 40-RE-2
Johnson, Lynn S.	40-QF-4	McGurk, Harry	40-MA-2
Jones, Coryl LaRue	40-LG-3	McKernon, Pat	40-DB-8
Jones, Elizabeth	40-OA-6	MacMurray, Val D.	40-RH-4
Jordan, Thomas E.	40-AA-21	McNamara, Thomas C.	40-OA-8
Juan, Stephen	40-RH-5	McPherson, Sigrid	40-JF-1
Junker, Karin Stensland	40-CH-1	MacWhinney, Brian	40-DH-6
		McWilliams, N.	40-CA-5
Kaban, Barbara	40-AA-15	Manning, K.E.	40-OA-2
Karas, Shirley C.	40-OB-1	Martin, Joan C.	40-SD-3
Katoff, Lew S.	40-DD-1	Mathur, Meena	40-PB-6
Kean, Michael H.	40-OA-8	Maurer, Harold M.	40-CA-5
Kenzie, W. Robert	40-DA-1	Mead, Ahmed	40-IA-2
Kerrick, Jan B.	40-GE-1	Medrich, Elliott A.	40-FA-7
Kiek, J.	40-QD-1	Miller, Douglas	40-DD-7
Kipps, Harriet	40-RH-1	Miller, Paula Jean	40-RH-1
Kirkpatrick, B.	40-CA-5	Mina, Elias	40-DD-9
Kleeman, James A.	40-FB-1	Mistry, Veena R.	40-PA-2, 40-PB-4, 40-PB-6
Klein, John S.	40-IA-2		
Klingberg, Göte	40-PB-3	Morgan, James N.	40-AA-20
Koenig, Carl	40-JE-3	Morland, J. Kenneth	40-NF-2, 40-NF-3
Konsky, Catherine	40-DH-1		
Koss, Lynn C.	40-DB-1	Morrison, Frederick J.	40-DB-7
Kottler, Sylvia B.	40-DD-4	Morrison, Susan May	40-OH-1
Kunzelman, Harold	40-JE-3		40-OK-1
		Moses, Rae A.	40-DH-4
Landres, Peter	40-AA-17	Moxzgermbia, Lindy	40-QH-1
Lansky, Shirley B.	40-GC-3	Muñoz, Raúl A.	40-RH-3

Murnane, Richard J.	40-OF-5	Raven, John	40-MC-1
Murray, Harry	40-OF-3	Redlinger, Larry	40-RH-1
Myer, E.	40-CA-5	Reid, John B.	40-KR-1
Myers, S.O.	40-GC-5	Renton, George	40-JI-1
Myers-Walls, Judith A.	40-LA-5	Reuter, Jeanette	40-DD-1
		Richards, Martin P.M.	40-SD-7
Nadar, Philip R.	40-SB-2	Riehecky, Janet	40-DH-1
Nathan, Michael R.	40-GE-8	Ritvo, Edward	40-JE-1
Neimark, Edith D.	40-DH-2	Robinson, Cordelia C.	40-GE-9
Niman, Carol	40-CC-4	Roche, Alexander F.	40-AA-1
Nodine, Barbara F.	40-PB-5	Roche, Cathy	40-QH-1
Nuffer, Ellen L.	40-DA-2	Rodabaugh, Barbara J.	40-GE-3
Nunnally, Jum C.	40-AA-16	Rodríguez, Ligia V.	40-RH-3
Nuthall, Graham A.	40-DC-1, 40-DC-2, 40-OG-4	Rosche, Marilyn	40-OF-3
Nyström, Mats	40-CD-1	Rosen, Harold	40-OA-7
		Rosenberg, Steven A.	40-GE-9
O'Connor, Margaret R.	40-JB-2	Rosenthal, Doreen A.	40-OH-1, 40-OK-1
Olejnik, Anthony B.	40-DF-3	Rosman, Bernice L.	40-KH-2
Olson, Myrna	40-OF-4	Royce, Jacqueline	40-OF-3
Ornitz, Edward M.	40-CG-3	Rubendall, Ann	40-OA-6
Owens, Ruth P.	40-CA-1, 40-CB-1	Rundle, A.T.	40-GF-2
		Ryan, Patricia	40-RE-1
Parsons, Michael J.	40-DB-2	Safran, Daniel	40-OJ-1
Passow, A. Harry	40-IA-2	Salasin, John	40-SG-2
Patterson, Gerald R.	40-KR-1	Sameroff, Arnold J.	40-LF-1
Pearson, Ronald D.	40-GE-6	Sanborn, Marshall P.	40-AA-19
Pedersen, Jane	40-OF-3	Saraswathi, T.S.	40-EC-1
Peters, Susan	40-CA-2	Satterfield, James H.	40-JC-2
Peterson, James	40-OF-3	Sauber, Mignon	40-RI-1
Pettygrove, Willa Bowman	40-OB-1	Savara, Bhim S.	40-AA-6
Phillipps, Roy W.	40-PA-3	Saxena, Kunjan	40-EC-1
Phillips, C.J.	40-QF-2	Scardamalia, Marlene	40-DF-1, 40-DF-4
Phillips, Roland	40-CA-3	Schneekloth, Lynda H.	40-CG-2
Pike, Ruth	40-DH-9	Schoen, Edgar	40-AA-3
Pinheiro, Marilyn L.	40-CC-6, 40-CC-7, 40-QF-5	Schoenfeld, Sidney L.	40-GE-1
Pitcher, Evelyn Goodenough	40-FA-3	Schofield, Hilary	40-OF-1
Podnieks, Ints	40-DG-2	Schramm, Victor L.	40-SA-2
Pollin, William	40-AA-12	Schroeder, Stephen R.	40-HH-2
Powell, Douglas R.	40-RF-1	Schuman, Davida R.	40-DF-2
Powell, Gloria J.	40-DG-6, 40-NA-2	Scott, Ralph	40-OK-2
Power, D.J.	40-GC-2	Scudder, Molly	40-OA-6
Prescott, Elizabeth	40-OA-6	Sebben, James A.	40-SG-1
Prusso, Kenneth W.	40-OA-8	Semill'a-Dubé, Lilia	40-PA-5
Pruzansky, Samuel	40-AA-9	Shapiro, Deborah	40-RB-1
Pulvino, Charles	40-AA-19	Sharan, Shlomo	40-OA-1
Pyle, S. Idell	40-AA-7	Sharp, A.	40-OA-2
		Shephatiah, Leah	40-OF-2
		Sherman, Julia	40-PA-4
Rabirotff, Bunny	40-OA-6	Shively, Jack J.	40-DD-8
Radovic, Nevenka	40-MA-2	Shotwell, Jennifer	40-DB-8
Rao, P.S.S. Sundar	40-SD-6	Shuck, Phyllis L.	40-EB-2
Rappaport, Herbert	40-EB-1	Siegel, Alberta E.	40-FE-3
Rappaport, Margaret M.	40-EB-1	Siegel, Linda	40-DH-3

Smaby, Marlow	40-KE-1	Veronico, Anthony J.	40-RD-2
Smart, Margaret	40-LA-6	Villalon, Marie	40-NG-4
Smilansky, Sarah	40-OF-2	Vining, Eileen P.G.	40-CG-1
Smith, Beryl	40-QF-2	Volkmar, Fred R.	40-FE-3
Smith, Doris	40-OA-6	Volterra, Virginia	40-DH-5
Smith, Kenard E.	40-NE-1	von Raffler-Engel, Walburga	40-FE-4, 40-FE-5, 40-FE-6
Smith, P.K.	40-OE-1	Voyat, Gilbert	40-PB-1
Smith, Robert G.	40-MC-3		
Smith, Thomas Ewin	40-LA-1		
Solway, Kenneth S.	40-KP-1	Wadsworth, Barry	40-DD-11
Somervill, Winona	40-OK-3	Wadsworth, N.E.J.	40-SA-3
Sowder, Barbara J.	40-LF-2	Walker, Carol	40-DH-3
Spitz, Herman H.	40-HC-1	Wandersman, Abraham	40-MC-2
Sprague, Robert L.	40-QF-1	Wandersman, Lois Pall	40-MC-2
Start, K.B.	40-OF-1	Warren, Bruce L.	40-RE-1
Steele, Connie	40-FA-8	Watts, B.H.	40-OA-5, 40-OG-3
Steinberg, Laurence D.	40-LA-2	Waugh, David	40-DC-1
Steiner, Gloria	40-RH-8	Waxman, Jerry J.	40-LG-2
Stinson, Michael S.	40-GC-1	Weitzman, Elliot D.	40-SD-1
Stone, Gladys I.	40-NG-4	West, Kathryn L.	40-JF-1
Stone, Gregory P.	40-NG-4	White, Burton L.	40-AA-15
Strauss, Sidney	40-DE-1	White, James	40-EF-1
Strayer, F.	40-FA-10	Wilhelm, Irma J.	40-GB-1
Strayer, Janet	40-DH-8, 40-FA-10	Wilkins, Arnold	40-GD-1
Streissguth, Anne Pyktowicz	40-SD-2, 40-SD-3	Wilkinson, J. Eric	40-NG-3
Strong, P.M.	40-SF-1	Williams, Frederick	40-FE-2, 40-LA-6
Sudell, B.	40-GF-2	Williams, Phyllis M.	40-CA-3
Sundaresan, Jayanthi	40-EC-1	Wilson, Fiona	40-AA-24
Sutton, Andrew	40-QF-2	Wilson, Mary D.	40-QD-1
		Wolf, Dennie	40-DB-8
Taittonen, Edith	40-RI-1	Wolkind, Stephen N.	40-JI-1
Taylor, Sara D.	40-OE-2	Wood, Janet	40-OA-6
Tennov, Dorothy	40-MB-1	Woodard, Samuel L.	40-OF-4
Ternouth, A.P.	40-OA-2		
Thomas, David R.	40-NG-2	Yonas, Albert	40-DG-1
Thomas, Stephen	40-AA-3	Yuwiler, Arthur	40-JE-1
Thompson, Barbara	40-AA-24		
Tobin, M.J.	40-GC-4, 40-GC-5, 40-GE-7	Zajonc, Robert B.	40-LC-2
Toledo, J.R.	40-SF-2	Zax, Melvin	40-LF-1
Tooze, F.H.G.	40-GE-7	Zellers, Robert W.	40-OG-2
Topp, S.G.	40-AA-18	Zill, Nicholas	40-NA-1
Townsend, G.C.	40-AA-23	Zitner, Rosalind	40-RB-1
Travers, Kenneth J.	40-PA-3		
Trost, M.A.	40-AA-13		
Tuma, June M.	40-DD-2		
Tuma, Nancy B.	40-FA-2		
Ullmann, Rina	40-QF-1		
Valentin, Ann	40-CD-1		
Van Camp, Sarah S.	40-DG-4		
van den Berg, Bea J.	40-AA-3		
van der Spuy, H.I.J.	40-DH-3		

SUBJECT INDEX

Administrative aspects of child

- abuse agencies 40-RH-1, 40-RH-2
- clinics (Scotland) 40-SF-1
- welfare agencies 40-RD-2
- mental health agencies 40-SG-1

Adolescents

- adoption 40-RD-2
- alcohol abuse 40-KH-1, 40-SB-1
- attitudes toward
 - race 40-NF-1
 - recreational development 40-NE-1
- delinquents 40-EF-1, 40-KP-1, 40-KR-1
- disruptive high school youth 40-QH-2
- disturbed 40-JF-1
- drug
 - abuse 40-KH-2
 - use 40-SB-1
- educable mentally retarded 40-HC-1
- family interaction 40-LA-2
- growth and development 40-AA-6
- handicapped 40-GE-8
- parental interaction 40-LA-1
- school dropouts 40-AA-10
- tobacco use 40-SB-1
- values 40-NE-2

Adoption 40-RD-1, 40-RD-2, 40-RD-3, 40-RE-2

African children 40-DG-6

Aging process 40-AA-1

Alcoholism 40-KH-1, 40-SB-1, 40-SD-2, 40-SD-3

Alternative schools 40-QH-2

Altruism in emotionally disturbed children 40-JB-2

Aphasia 40-GC-6

Appalachian children 40-NE-1

Architecture

- design of English schools 40-OA-3
- playground design 40-CG-2

Art 40-DB-2, 40-PB-1

Asian

- children 40-FA-7
- families 40-SF-3

Aspirations. See Values.

Asthma 40-JD-1

Athletics 40-FA-6

Attitudes of

- adolescents toward
 - recreational development 40-NE-1
- adults toward
 - children's literature in India 40-PB-6
 - math learning for girls 40-PA-4

Attitudes of (continued)

children toward

- daily life 40-NA-1
- race 40-NF-1, 40-NF-2
- reading and math 40-OF-1
- school 40-LA-4, 40-OE-2, 40-OK-1
- sex stereotypes 40-FE-2

teachers toward

- reading and math 40-OF-1

Auditory

- perception 40-CC-5, 40-CC-6, 40-CC-7, 40-FE-3, 40-FE-4, 40-FE-5, 40-FE-6, 40-SA-2
- processing tasks 40-QF-5

Australian

- Aborigines 40-AA-23
- children 40-AA-23, 40-LA-4, 40-NG-1, 40-OF-1, 40-OG-3, 40-OH-1, 40-OK-1, 40-RH-5
- teachers 40-OA-5

Autism 40-JE-1, 40-JE-2, 40-JE-3

Battered children. See Child abuse.

Behavior

- adult-child interaction 40-FE-6
- classroom 40-QF-1
- communicative 40-AA-14
- cooperation/competition 40-FA-4, 40-FA-5, 40-NG-2
- disorders 40-JE-3, 40-QF-3
- effects of positive/negative instruction 40-DF-3
- exploratory 40-FA-1
- infant 40-AA-14
- modeling 40-DF-2, 40-FE-8
- modification 40-HH-1, 40-HH-2, 40-MB-1
- neonatal 40-AA-5
- nonverbal 40-FE-4, 40-FE-5, 40-FE-6
- parental toward adolescents 40-LA-1
- play 40-CG-2
- problem 40-CA-2
- self-injurious 40-CG-3, 40-HH-2
- self-rocking/head banging 40-CG-3
- sexual 40-FB-1
- social 40-FA-9, 40-FA-10, 40-FE-3
- verbal 40-OG-4
- violent 40-FE-7

Belgique children 40-SB-1

Bender Gestalt Test

Piagetian/Koppitz scoring systems 40-DD-5

Biological rhythms 40-DG-2

Black

children 40-CA-3, 40-DB-5, 40-DG-4, 40-DG-6,
40-EB-2, 40-FA-7, 40-FE-2, 40-FE-4,
40-FE-5, 40-FE-6, 40-FE-7, 40-LA-6,
40-NA-1, 40-NF-2, 40-OA-4, 40-OF-3,
40-OF-4, 40-OF-5, 40-PB-1, 40-RF-1,
40-RH-7, 40-RH-8

families 40-RH-7

Blind children 40-GC-4, 40-GE-3

Body proportion 40-AA-7

Busing 40-OK-2

Canadian children 40-CA-2, 40-DD-9, 40-DF-1,
40-DG-2, 40-DH-3, 40-DH-8,
40-DH-9, 40-FA-10, 40-OG-1,
40-RH-4

Cancer 40-AA-22, 40-GC-3, 40-GF-1, 40-GF-3

Cardiac conditions 40-SF-2

Career development 40-OB-1

Caribbean children 40-NA-2

Cartoons 40-DB-15

Cerebral palsy 40-AA-11

Character development 40-AA-8

Chicano children 40-FE-2, 40-FE-7

Child

abuse 40-LF-2, 40-RH-1, 40-RH-2, 40-RH-3,
40-RH-4, 40-RH-5, 40-RH-6, 40-RH-7,
40-RH-8

birth 40-LA-5

Development Associates (CDA) 40-OB-1

mortality 40-LG-2

rearing. See Family.

support 40-R1-1

Children's literature 40-PB-6

sex stereotypes in 40-PB-4

translations (Swedish) 40-PB-3

Chinese children 40-NF-3

Clothing budgets 40-AA-2

College students 40-DD-7, 40-DH-2, 40-NF-3,
40-OK-3, 40-PB-5

Communication

adult-child 40-FE-6

auditory and visual channels 40-FE-3

disorders 40-CC-6, 40-CH-1

nonverbal 40-FE-1, 40-FE-4, 40-FE-5

parent-caregiver relationship

in day care settings 40-RF-1

television 40-FE-2, 40-FE-7, 40-FE-8, 40-LA-6

writing

of aphasic children 40-GC-6

skills 40-PB-5 See also Language; Speech.

Consortium on Developmental Continuity 40-OF-3

Consumer aids 40-AA-2

Cook Islands children 40-NE-2, 40-NG-2

Counseling 40-LC-1

Court trial

of adolescents certified as adults 40-KP-1

Craniofacial

anomalies 40-AA-9

growth 40-AA-23

Creativity 40-IA-3

of mentally retarded children 40-DA-2

Crippled children. See Physically handicapped
children.

Cross-cultural studies 40-DB-6, 40-LC-2, 40-NE-2,
40-NF-3, 40-RH-5

Cultural factors 40-DG-6, 40-EC-1, 40-FA-7,
40-IA-1, 40-NA-1, 40-NA-2,
40-NE-2, 40-NF-1, 40-NF-3,
40-NG-1, 40-NG-3, 40-NG-4,
40-OF-4, 40-SF-3

Cystic fibrosis 40-GE-6

Day care

parent-caregiver relationships 40-RF-1
settings

effects on language use 40-DH-7

Deaf children 40-GC-1, 40-GC-2, 40-GC-5, 40-GC-6,
40-GE-1, 40-GE-4, 40-GE-5

Dental studies 40-AA-23

Dentofacial growth 40-AA-6

Diet effects on blood pressure 40-CA-3

Diseases

asthma 40-JD-1

cancer 40-AA-22, 40-GC-3, 40-GF-1, 40-GF-3

cystic fibrosis 40-GE-6

epilepsy 40-GD-1

leukemia 40-GF-3

schizophrenia 40-JF-1

tuberous sclerosis 40-GF-2

Divorce 40-LC-1

Drawing of human figure 40-DB-14

Drug

abuse 40-KH-2, 40-LF-2

treatment in hyperkinesis 40-JC-2

use 40-SB-1

Dutch children 40-LC-2

Dyslexia 40-CC-6

Education

academic

achievement 40-AA-21, 40-AA-24, 40-FA-7,
40-GC-4, 40-NA-2, 40-OF-1,
40-OF-2, 40-OF-4, 40-OF-5,
40-OG-4, 40-OK-1, 40-PA-1

improvement through hypnosis 40-QF-4

alternative programs

for disruptive youth 40-QH-2

Education (continued)

aspirations 40-OH-1
 assessment 40-DD-4
 busing 40-OK-2
 Child Development Associates (CDA) 40-OB-1
 children's accounts of learning processes 40-DC-2
 classroom
 behavior 40-QF-1
 environment 40-OF-2
 interaction 40-OA-5, 40-OG-3
 curriculum development 40-OA-2, 40-OK-3
 dropouts 40-AA-10
 effects of retention in school 40-EB-2
 foster parent 40-RE-1
 health 40-SF-2
 program 40-SB-2
 individualized instruction 40-PA-1
 instructional techniques 40-OA-1
 mainstreaming 40-DA-2
 maladaptation 40-AA-13
 male-female equality 40-OK-3
 mathematics 40-PA-2, 40-PA-3, 40-PA-4, 40-PA-5
 mental health 40-AA-13
 nursery school 40-OA-2, 40-OG-1
 of autistic children 40-JE-3
 of gifted children 40-AA-19, 40-IA-1, 40-IA-2
 of handicapped children 40-GE-7, 40-QF-2, 40-QH-1
 of socially disadvantaged children 40-NG-3
 open plan schools (England) 40-OA-3
 parent 40-MC-1, 40-MC-3, 40-OJ-1
 hood 40-LA-5, 40-MC-2
 perceptions of parents, students, and teachers
 of educational environment 40-OG-2
 play tutoring (England) 40-OE-1
 prekindergarten programs 40-OA-4
 program
 assessment 40-AA-24
 evaluation 40-AA-13, 40-GE-3, 40-GE-7
 racial balance in schools 40-NF-2
 reading 40-DH-9, 40-PB-2
 readiness 40-GE-3
 remedial
 programs 40-GE-5
 reading 40-PB-1
 school
 demography 40-OK-1
 readiness 40-OE-2
 science 40-PA-2
 screening
 for developmental problems 40-DD-8
 special 40-GC-2, 40-KE-1, 40-QD-1, 40-QF-1
 survey of inner London schools 40-OA-7
 teacher aide 40-AA-13

Education (continued)

teaching process in open classrooms 40-OA-6
 test reliability 40-DD-2
 tutoring 40-DF-2
 vocational (handicapped students) 40-GE-2
 Emotionally disturbed
 children 40-AA-17, 40-DD-10, 40-JB-1, 40-JB-2, 40-JC-2, 40-JE-3, 40-JF-1, 40-JI-1, 40-QD-1
 mothers 40-LF-1
 English
 children 40-AA-18, 40-DH-6, 40-GC-4, 40-GC-5, 40-GC-6, 40-GD-1, 40-GE-7, 40-GF-2, 40-JE-2, 40-MA-2, 40-OA-2, 40-OA-3, 40-OA-7, 40-OE-1, 40-PB-2, 40-QD-1, 40-QF-2, 40-SA-3, 40-SD-7
 schools 40-OA-3
 Environmental
 design standards 40-LG-3
 factors 40-AA-12, 40-AA-15, 40-AA-21, 40-FB-1, 40-FE-8, 40-IA-1, 40-LG-3, 40-NA-1, 40-NE-1, 40-OA-3, 40-OG-2, 40-SD-6
 Epilepsy 40-GD-1
 Ethnic
 factors 40-NF-3
 European children 40-NE-2
 Exceptional children. See specific types.
 Eye-hand dominance 40-DG-4
 Family
 addict parents 40-LF-2
 advertising influences on
 infant feeding 40-CE-2
 alcoholic mothers 40-SD-2, 40-SD-3
 behavior 40-MB-1, 40-SA-3
 care of infants 40-LA-5
 characteristics related to drug abuse 40-KH-2
 childrearing 40-AA-15, 40-MC-1
 attitudes 40-MA-1, 40-RF-1
 practices 40-LA-3, 40-MB-1, 40-RH-7, 40-SA-3
 children of divorced parents 40-LC-1
 child support 40-RI-1
 clothing budget 40-AA-2
 configuration 40-LC-2
 correlates of
 maternal alcoholism 40-SD-2, 40-SD-3
 nutrition 40-AA-18
 environment 40-AA-15
 effects on
 psychological disorders 40-JF-1
 home education program 40-QH-1
 hospitalized children 40-LG-3
 influences on

Family (continued)

academic performance 40-FA-7
 creativity 40-IA-3
 language
 delays 40-DH-3
 development 40-GE-5
 income survey 40-AA-20
 interaction 40-LA-2
 life in Austrian village 40-NG-1
 maternal
 alcoholism 40-SD-2, 40-SD-3
 correlates of
 neonatal behavior 40-AA-5
 dietary effects on birthweight 40-SD-5
 -infant
 interaction 40-LA-5, 40-MA-2, 40-NA-2
 teaching skills 40-GE-9
 influence 40-AA-21
 on cognitive development 40-DB-6
 mental disorders 40-LF-1
 self-confidence 40-LA-5
 of children with cancer 40-GC-3
 parental
 abuse of children 40-RH-4
 adjustment to
 child mortality 40-LG-2
 infants 40-MC-2
 compatibility 40-LA-3
 guidance 40-AA-19
 influence on adolescents 40-LA-1
 involvement in schools 40-OJ-1
 rights 40-OJ-1
 training for foster parents 40-RE-1
 parent
 -child interaction 40-DH-8, 40-FA-1, 40-LA-6,
 40-MC-3
 -hood 40-LA-5
 education 40-MC-2
 patterns of reproduction 40-AA-24
 sexual behavior of children 40-FB-1
 siblings reactions to
 children with chronic illnesses 40-LG-1
 size 40-MA-1
 socially disadvantaged (in Scotland) 40-NG-3
 treatment programs to prevent child abuse 40-RH-4
 values in Australia 40-LA-4
 violence 40-RH-5
 Federally funded programs 40-RH-1
 Fiji Island children 40-NE-2, 40-NG-2
 Finnish children 40-CH-1
 Follow Through 40-OA-8
 Food marketing 40-CE-2
 Foster care 40-RE-1, 40-RE-2, 40-RH-6
 French children 40-LC-2

Friendship patterns 40-FA-2, 40-FA-6

Gender identity 40-FB-1, 40-OG-1

Genetics 40-AA-3

counseling 40-GF-2
 defects 40-AA-9

Gifted children 40-IA-1, 40-IA-2, 40-IA-3

Goals. See Values.

Growth standards (Australian Aborigines) 40-AA-23

Guidance Laboratory for superior students 40-AA-19

Head Start 40-DD-4, 40-OA-8

Health

anemia 40-CE-1
 assessment 40-SA-1
 asthma 40-JD-1
 blood
 pressure levels 40-CA-3
 serotonin concentration 40-JE-1
 cancer 40-AA-22, 40-GC-3, 40-GF-1, 40-GF-3
 cardiac conditions 40-SF-2
 central nervous system dysfunction 40-GB-1
 chronic illness 40-LG-1
 divergence excess strabismus 40-CC-1
 education 40-SF-2
 gonadal dysfunction 40-CA-1
 hearing aids 40-GE-1
 hormone treatment 40-CA-1, 40-CB-1
 hyperbilirubinemia 40-CA-5
 infant feeding 40-CE-2
 lead concentration in blood 40-SD-4
 leukemia 40-GF-3
 maternal 40-SD-5
 -child 40-SD-4
 mental health
 services 40-SG-1, 40-SG-2
 survey 40-SG-2
 nutrition 40-AA-18, 40-RH-6
 pituitary functioning 40-CB-1
 respiratory problems in infancy 40-SD-1
 school programs 40-SB-2
 screening for
 communicative disorders 40-CH-1
 hearing loss 40-SA-2
 services 40-SA-1, 40-SB-2, 40-SD-6, 40-SF-1,
 40-SF-2, 40-SF-3
 status 40-AA-1
 Sudden Infant Death Syndrome 40-SD-1
 surveys 40-SA-3, 40-SD-6
 tuberous sclerosis 40-GF-2
 Hearing aids 40-GE-1
 Heredity. See Genetics.
 High school
 dropouts 40-AA-10

High school (continued)

- early graduates 40-AA-10
- students 40-DD-7, 40-NE-1, 40-NF-1, 40-OA-7, 40-PA-3, 40-QH-2
- Hispanic children 40-GE-5
- Home programs 40-MC-1, 40-MC-3
- Hospitalized children 40-GA-1, 40-GE-8, 40-GF-1, 40-JE-1, 40-LG-1, 40-LG-3
- Hungarian children 40-DH-6
- Hyperbilirubinemia 40-CA-5
- Hyperkinesia 40-CA-2, 40-JC-1, 40-JC-2, 40-QF-1
- Hypertension 40-CA-3
- Hypnosis 40-QF-4
- Immigrants 40-SF-3
- Indian children 40-CE-1, 40-EC-1, 40-PA-2, 40-PB-4, 40-PB-6, 40-SD-6
- Individual differences 40-AA-12, 40-FA-2, 40-FA-4, 40-FA-5, 40-FE-4, 40-FE-5, 40-FE-6
- Institutionalized children 40-AA-17, 40-DD-10, 40-HH-2, 40-JE-3, 40-JI-1
- Integration 40-NF-2, 40-OK-2
- Intelligence
 - adaptive ability 40-DA-2
 - associative learning 40-DC-1
 - cognitive
 - development 40-AA-4, 40-AA-15, 40-AA-21, 40-DB-1, 40-DB-2, 40-DB-4, 40-DB-6, 40-DB-7, 40-DB-8, 40-DB-9, 40-DB-10, 40-DB-11, 40-DB-12, 40-DB-13, 40-DB-14, 40-DB-15, 40-DB-16, 40-DG-3, 40-DH-5, 40-GC-4, 40-HC-1, 40-LA-2, 40-LC-2, 40-OA-4, 40-OF-3, 40-OG-1
 - organization 40-DB-5
 - processes 40-DB-7, 40-DB-17, 40-DF-1, 40-DF-3, 40-DF-4, 40-DH-2, 40-GC-6, 40-QF-6
 - style 40-DB-3
 - concept development 40-DE-1, 40-FA-8
 - conservation 40-DB-12, 40-DB-16
 - curiosity 40-DA-1
 - developmental
 - delay 40-MB-1
 - difficulties 40-CA-2
 - representation 40-DB-14
 - field dependence 40-DF-4
 - incongruity 40-DB-15
 - lateral dominance 40-DG-4
 - linguistic development 40-DH-9
 - literacy skills 40-DG-6, 40-NA-2
 - perceptual processes 40-DG-2, 40-DG-5

Intelligence (continued)

- problem solving 40-DA-1, 40-DF-1, 40-DF-2, 40-PA-5
- qualitative/quantitative reasoning 40-DE-1
- recognition/representation 40-DB-13
- seriation 40-DB-9
- social/object-decentering 40-JB-1
- spatial
 - reasoning 40-DF-4
 - representation 40-DB-10, 40-DB-11
 - /temporal relations 40-DB-4
- symbolization skills 40-DB-8
- testing 40-AA-4, 40-AA-5, 40-DD-2, 40-DD-3, 40-DD-4, 40-DD-5, 40-DD-6, 40-DD-9, 40-DD-10, 40-DD-11
- thought processes 40-DF-5
- two dimensional representation 40-DF-5
- visual perceptual ability 40-GE-7
- International surveys 40-PA-3
- Israeli children 40-DE-1, 40-FA-9, 40-OA-1, 40-OF-2
- Italian children 40-DH-6
- Japanese children 40-DB-6
- Juvenile
 - delinquency 40-EF-1, 40-KC-1, 40-KE-1, 40-KH-1, 40-KH-2, 40-KP-1, 40-KR-1
 - justice system
 - trial certification 40-KP-1
- Language
 - acquisition 40-AA-14, 40-DH-8
 - deficits 40-JE-3
 - development 40-AA-14, 40-AA-15, 40-CC-7, 40-DB-1, 40-DH-1, 40-DH-2, 40-DH-3, 40-DH-4, 40-DH-5, 40-DH-6, 40-DH-7, 40-DH-9, 40-DH-10, 40-GC-2, 40-GC-6, 40-PB-5
 - discrimination (deaf children) 40-GC-1
 - diversity (London schools) 40-OA-7
 - impaired children 40-GE-5
 - syntactic acquisition 40-DH-6
 - written 40-DH-4
 - See also Communication; Speech.
- Learning
 - disabilities 40-DB-9, 40-DD-8, 40-DD-9, 40-MB-1, 40-MC-3, 40-KE-1, 40-OG-3, 40-QF-3, 40-QF-4, 40-QF-5, 40-QF-6
 - disorders 40-DG-3
 - incentive values 40-AA-16
 - memory 40-DB-5, 40-DC-1, 40-DC-2, 40-GC-5, 40-JE-2

Learning (continued)

- processes 40-DC-2
- Lifestyle of American children 40-NA-1
- Literacy in Scotland 40-NG-3
- Little League 40-FA-6

Mathematics

- curriculum development (preschool) 40-PA-2
- education 40-PA-4
- individualized instruction 40-PA-1
- problem solving 40-PA-5

Media violence 40-FE-8

Medical

- records 40-EA-1
- research 40-AA-22, 40-CA-4, 40-CA-5, 40-GB-1, 40-GE-6, 40-GF-2, 40-GF-3

Mental health

- program 40-AA-13
- services 40-SG-1, 40-SG-2
- survey 40-SG-2

Mentally retarded children 40-CA-2, 40-DA-2, 40-DD-3, 40-HC-1, 40-HH-1, 40-HH-2, 40-HH-3

Mexican-American children 40-CA-3, 40-FA-7, 40-IA-1, 40-SF-2

Migrant children 40-OH-1, 40-OK-1

Migration 40-NE-2

Moral

- development 40-EC-1
- judgment 40-DD-7

Mortality 40-AA-3, 40-SD-1

Motor

- abilities 40-AA-4, 40-CG-2
- development 40-CG-3
- developmental disorders 40-CG-1

Mute children 40-CH-1

National surveys 40-AA-20, 40-NA-1, 40-RD-3, 40-SA-3

Neonates 40-AA-5, 40-CA-5, 40-CC-4, 40-CD-1, 40-GB-1, 40-LA-5, 40-MA-2, 40-RB-1, 40-SA-7

Newborn infants. See Neonates.

New Zealander children 40-DC-1, 40-DC-2, 40-NE-2, 40-OG-4, 40-PA-3

Nutrition 40-AA-6, 40-AA-18, 40-CE-1, 40-CE-2, 40-GE-6, 40-NA-2, 40-SD-5

Open education 40-OA-6

Papua New Guinea children 40-PA-5

Paraprofessionals 40-OB-1

Parent participation and education 40-DD-10,

Parent participation and education (continued)

- 40-FB-1, 40-FE-8, 40-GE-9, 40-KR-1, 40-MC-1, 40-MC-2, 40-MC-3, 40-OJ-1, 40-QH-1, 40-RE-1

Peer

- imitation 40-HH-1
- influence 40-FA-3
- interaction 40-FA-9
- perceptions of classmates 40-OG-3
- relationship 40-FA-10, 40-FD-1

Perceptual

- development 40-CC-3, 40-DG-6, 40-NA-2
- motor processes 40-CC-5, 40-DB-7, 40-DG-1, 40-DG-2, 40-DG-5, 40-SA-2

Perinatal factors 40-AA-3, 40-AA-11, 40-AA-12, 40-AA-24, 40-LA-5, 40-LF-1, 40-RB-1, 40-SD-4, 40-SD-7

Personality

- aesthetic responses 40-DB-2
- anxiety 40-EF-1
- assessment 40-DD-10
- coping mechanisms 40-GC-3
- development 40-AA-1, 40-AA-8, 40-AA-12, 40-EB-1
- ego development 40-RH-8
- generosity 40-NG-2
- humor 40-DB-15
- impulsiveness 40-EF-1
- leadership ability 40-FD-1
- maternal self-confidence 40-LA-5
- moral development 40-EC-1
- nurturance 40-NG-1
- prediction 40-EA-1
- psychosocial adjustment to cancer 40-GC-3
- racial self-acceptance 40-NF-2
- responsibility 40-NG-1
- self

- acceptance 40-OF-4
- concept 40-GE-8, 40-OF-1, 40-OG-3
- esteem 40-EB-1, 40-EB-2, 40-JB-2, 40-LC-1, 40-QF-4

Photosensitivity of epileptics 40-GD-1

Physical

- anomalies 40-CA-2
- fitness evaluation 40-GA-1
- growth and development 40-AA-1, 40-AA-3, 40-AA-4, 40-AA-5, 40-AA-6, 40-AA-7, 40-AA-9, 40-AA-12, 40-AA-21, 40-AA-23, 40-AA-24, 40-BA-1, 40-CA-1, 40-CA-3, 40-CB-1, 40-CC-1, 40-CC-2, 40-CC-4, 40-CG-1, 40-CG-3, 40-DD-1, 40-GA-1, 40-GB-1, 40-LA-2, 40-SA-1, 40-SD-5, 40-SD-6, 40-SD-7

Physically handicapped children 40-AA-22, 40-CA-4, 40-CC-6, 40-CH-1, 40-DG-3, 40-GA-1, 40-GB-1, 40-GC-2, 40-GC-4, 40-GC-5, 40-GC-6, 40-GD-1,

Physically handicapped children (continued)

40-GE-1, 40-GE-2, 40-GE-3, 40-GE-4, 40-GE-5,
40-GE-6, 40-GE-7, 40-GE-8, 40-GE-9, 40-GF-3,
40-MC-3, 40-QH-1, 40-RD-2

Piagetian theory 40-DB-2, 40-DB-10, 40-DB-12,
40-DB-16, 40-DD-5, 40-DD-11, 40-OG-3, 40-JB-1

Play 40-FA-1, 40-OA-2

behavior 40-CG-2

grounds 40-CG-2

of Indian children 40-NG-4

patterns 40-FA-9

symbolic 40-DB-1

therapy 40-RH-8

tutoring 40-OE-1

Polynesian children 40-NE-2, 40-NG-2

Preadolescent group behavior 40-FA-6

Pregnancy. See Perinatal factors; Prenatal factors.

Prejudice 40-NF-1

Prenatal factors 40-AA-11, 40-AA-12, 40-SD-3,
40-SD-6

Prostheses 40-GE-4

Psychoses 40-AA-17, 40-JI-1

Psychosocial effects on

blood pressure 40-CA-3

Puerto Rican children 40-DG-4, 40-OA-4, 40-RH-3

Racial

attitudes 40-NF-1

factors 40-NF-2, 40-NF-3

Reading

children's literature 40-PB-3, 40-PB-4, 40-PB-6

education 40-PA-1

linguistic prerequisites 40-DH-9

readiness 40-GE-3, 40-OE-2

remedial programs 40-PB-1

strategies of learning 40-PB-2

Recreational development (West Virginia) 40-NE-1

Rehabilitation of handicapped children 40-GA-1

Reinforcement techniques 40-AA-16

Residential care 40-JI-1

Rural children 40-NG-2

Samoan children 40-NE-2, 40-NG-2

Schizophrenia 40-JF-1

Science curriculum development (preschool) 40-PA-2

Scottish children 40-AA-24, 40-LC-2, 40-MC-1,
40-NG-3, 40-SD-5, 40-SF-1

Screening

techniques 40-SA-1

tests 40-DD-1

Self-concept. See Personality.

Sensory

auditory tasks for

learning disabled 40-QF-5

Sensory (continued)

development 40-CC-5, 40-SA-2

processes 40-DG-4

stimuli of infants 40-CC-4

Sex

abuse 40-RH-3

differences 40-OK-3, 40-PB-4

education programs 40-GE-8

male/female equality 40-FD-1

role 40-FA-3, 40-FB-1, 40-FD-1, 40-PA-4

stereotypes 40-FE-2, 40-FE-7, 40-PB-4

Siblings 40-GC-3, 40-LG-1

reactions to death 40-LG-2

Sleep 40-CD-1

Social

attitudes 40-FE-7

communication 40-FE-3, 40-FE-4, 40-FE-5,
40-FE-6

competence 40-FA-8

conduct disorders 40-JI-1

development 40-AA-21, 40-FA-2, 40-FA-3,
40-FA-9, 40-NG-2, 40-NG-4

influences on academic performance 40-FA-7

interaction 40-FA-1, 40-FA-4, 40-FA-5,
40-FA-9, 40-FA-10, 40-FD-1,
40-FE-1, 40-HH-1, 40-JC-1, 40-SF-1

problem solving training 40-HH-3

relations 40-FA-6

services 40-KC-1, 40-KR-1, 40-LF-2, 40-RB-1,
40-RD-1, 40-RD-2, 40-RD-3, 40-RE-2,
40-RH-2, 40-RH-3, 40-RH-7, 40-RI-1,
40-SF-3

sexual equality 40-FD-1

team behavior 40-FA-6

Socioeconomic factors 40-AA-4, 40-AA-18, 40-AA-20,
40-AA-21, 40-EC-1, 40-FE-6, 40-LA-4, 40-OA-4,
40-OF-2

South American Indian children 40-NG-4

Spanish-speaking children 40-OA-4, 40-QH-1

Special education. See Education.

Speech

development 40-GE-4

mute children 40-CH-1

See also Communication; Language.

Statewide survey 40-KC-1, 40-SG-1

Statistical survey 40-AA-2

Story

books 40-PB-6

telling 40-FE-4, 40-FE-5, 40-FE-6

Sudden Infant Death Syndrome 40-LG-2, 40-SD-1

Surveys

health 40-SA-3, 40-SD-6

mental health 40-SG-2

of children's attitudes 40-NA-1

Surveys (continued)

- of inner London schools 40-OA-7
- New York State educational 40-OA-4
- statewide 40-KC-1, 40-SG-1
- statistical 40-AA-2
- Swedish research 40-CD-1, 40-CH-1, 40-PB-3

Teacher

- characteristics 40-OF-5
- credentials 40-OB-1
- education 40-OA-2
 - programs (Australia) 40-OA-5
- male teachers' influence 40-OG-1
- pupil interaction 40-OG-4
- ratings of hyperactive children 40-QF-1
- sex differences 40-OG-1
- verbal behavior 40-OG-4

Teenagers. See Adolescents.

Television 40-FE-2, 40-FE-7, 40-FE-8, 40-LA-6

Temperature

- concept of 40-DE-1

Tests and measures

- American Association on Mental Deficiency
 - Adaptive Behavior Scale 40-HH-3
- Analysis of Developmental Learning Skills Instrument 40-DD-8
- assessment of learning disabilities 40-DD-9
- Asthma Questionnaire 40-JD-1
- Attitudes toward Education Scale 40-KE-1
- Bayley Scales of
 - Infant Development 40-DB-8, 40-GE-9, 40-LF-1, 40-MA-2, 40-RH-6, 40-SD-3
 - Mental and Motor Development 40-FA-8, 40-GB-1
- Bender Gestalt Test 40-DB-11, 40-DD-5, 40-DD-6
- Birch and Belmont Auditory-Visual Integration Test 40-DG-6
- Boehm Test of Basic Concepts 40-AA-21
- Brazelton Neonatal Assessment Scale 40-CC-4, 40-GB-1, 40-LF-1, 40-SD-3
- Bristol Social Adjustment Guides (Stott) 40-JI-1
- California
 - Achievement Test 40-AA-24
 - Preschool Social Competency Scale 40-OA-4
- Carey Infant Temperament Inventory 40-MA-2
- central auditory tests 40-CC-6
- Childrearing Dilemmas Test 40-LA-3
- Children's Hypnotic Susceptibility Scale 40-QF-4
- Classroom Behavior Inventory 40-OA-4
- Conner's rating scale 40-CA-2
- Cooperative Preschool Inventory 40-OA-4
- Coopersmith Self-Esteem Inventory 40-JB-2, 40-QF-4

Tests and measures (continued)

- cultural orientation scale 40-SF-3
- Defining Issues Test 40-DD-7
- Denver Developmental Screening Test 40-DD-4, 40-GB-1
- development 40-DB-10, 40-DD-1, 40-DD-11, 40-DG-3, 40-RF-1
- Draw-A-Human Figure Test 40-GE-8
- Draw-A-Person Test 40-KP-1, 40-LF-2
- Durell Analysis of Reading Difficulty 40-QF-4
- Edinburgh Handedness Inventory 40-CC-7
- Elementary School Environment Survey 40-OG-2
- Faith in People Test 40-KE-1
- Gates-MacGinitie Reading Tests 40-DH-9
- Goodenough Draw-A-Man Test 40-IA-2
- Hahmemann Preschool Behavior Scale 40-HH-3
- Home Observation for Measurement of the Environment 40-GB-1, 40-MC-3
- Illinois Test of Psycholinguistic Abilities 40-AA-21, 40-CC-7
- Interpersonal Checklist 40-KP-1
- Jordan Ad Hoc Scale of Development 40-AA-21
- Kagan-Madsen rivalry measure 40-NG-2
- Kansas Reflection-Impulsivity Scale for Preschoolers 40-DB-3
- KID Scale 40-DD-1
- Kluckholm Value Orientation Scale 40-NE-2
- Kohlberg's Moral Judgment Test, Form A 40-EC-1
- Koontz Child Development Scale 40-MC-3
- Louisville Behavior Checklist 40-JB-2
- McCarthy Scales of Children's Abilities 40-DB-8
- Madsen Cooperation Board 40-NG-2
- Means-Ends Problem Solving Test 40-HH-3
- Metropolitan
 - Achievement Test 40-DH-9
 - Readiness Test 40-OE-2
- Milani-Comparetti Developmental Examination 40-GB-1
- Minnesota Multiphasic Personality Inventory 40-GC-3, 40-KP-1
- Missouri Children's Behavior Checklist 40-DD-10
- Mueller-Lyer Test 40-DG-6
- Offer Self-Image Questionnaire 40-GE-8
- Ordinal Scales of Infant Psychological Development 40-GB-1
- Peabody Picture Vocabulary Test 40-AA-21, 40-DB-3, 40-KE-1, 40-OA-4
- Peterson & Quay Behavior Problem Checklist 40-CA-2
- Piers-Harris Self-Concept Scale 40-GE-8
- Preschool
 - Attainment Record 40-AA-21
 - Embedded Figures Test 40-DB-3, 40-DG-6, 40-FD-1

Tests and measures (continued)

Interpersonal Problem Solving Test 40-HH-3
 Inventory 40-AA-21
 Primitive Reflex Profile 40-CG-1
 Reitan Battery 40-SD-2
 Robbie the Rabbit Picture Test 40-LF-2
 Rorschach Inkblot Test 40-KP-1
 Santa Clara Inventory of Developmental Tasks 40-MC-3
 Script Matrix 40-OF-4
 Self
 -Appraisal Inventory 40-EB-2
 -Esteem Scale 40-KE-1
 -Observation Scale 40-OF-4
 Slossen Intelligence Test 40-KE-1
 Snellen "E" Test 40-DG-6
 Stanford
 -Binet Intelligence Scale 40-DD-3, 40-FA-8, 40-IA-2, 40-IA-3, 40-OF-3, 40-RH-6
 Early School Achievement Test 40-OA-8
 Stroop Color-Word Tasks 40-DB-17
 Survey of School Attitudes 40-OE-2
 Teacher Behavior Report 40-JB-2
 Teachers and Parents Questionnaire (Rutter) 40-JI-1
 Thematic Apperception Test 40-KP-1
 Torrance Figural Test of Creative Thinking 40-DA-2
 Trailmaking Tasks 40-DB-17
 Uzgiris-Hunt Scales 40-DB-1, 40-DB-8
 validity 40-DD-6, 40-DD-10
 Verbal Language Development Scale 40-AA-21
 Walker Readiness Test for Disadvantaged Children 40-OA-4
 Wechsler
 Adult Intelligence Scale 40-KP-1, 40-RH-6
 Intelligence Scale for Children 40-KE-1 40-KP-1, 40-OF-3
 Intelligence Scale for Children-R 40-DD-2, 40-KE-1, 40-KP-1
 Intelligence Scale for Children Digit Test 40-DG-6
 Preschool and Primary Scale of Intelligence (Vocabulary Subtest) 40-AA-21
 Wepman Auditory Test 40-DG-6
 Wide Range Achievement Test 40-IA-2, 40-QF-4
 Wolanski Motor Evaluation 40-GB-1
 Toy lending library 40-MC-3
 Transactional analysis 40-OF-4
 Twins 40-AA-6, 40-AA-12, 40-LC-2

Urbanization 40-NE-2

Values 40-AA-8, 40-EC-1, 40-FD-1, 40-NA-1, 40-NE-2

Values (continued)

formation 40-EB-1
 of Australians 40-LA-4, 40-OH-1
 Venezuelan children 40-BA-1
 Vestibular nystagmus 40-CG-3
 Videotapes 40-AA-14, 40-DB-1, 40-DF-1
 Visual
 handicaps 40-GC-5, 40-GE-3, 40-GE-7
 learning disorders 40-DG-3
 perception 40-CC-1, 40-CC-2, 40-CC-3, 40-DG-1, 40-DG-5, 40-FE-3
 Vocational
 exploration of superior students 40-AA-19
 Welfare services. See Social services.
 Welsh children 40-QD-1
 West Indian children 40-CE-2
 Writing
 development 40-DH-4
 skills 40-PB-5
 of aphasic children 40-GC-6

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Communication Disorders, Information Center for Hearing, Speech, and Disorders of Human Communication, The Johns Hopkins Medical Institutions, 310 Harriet Lane Home, Baltimore, Maryland 22105.

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Index Medicus, National Institutes of Health. Order from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Language and Language Behavior Abstracts (quarterly), Center for Research on Language and Language Behavior, University of Michigan, Ann Arbor, Michigan 48104. Order from Subscription Manager, LLBA, Meredith Publishing Co., 440 Park Avenue South, New York, New York 10016.

National Bureau of Child Welfare Library (Voor Kinderbescherming), Stadhouderslaan 150, The Hague, The Netherlands, publishes abstracts of articles in the field of child welfare each month. The articles are in Dutch, but those familiar with the Universal Decimal System would be able to understand something about the articles. The subscription rate for documentation on cards is 30 guilders (approximately \$8.40).

Nutrition Abstracts and Reviews, Commonwealth Bureau of Animal Nutrition, Bucksburn, Aberdeen AB2 9SB, Scotland.

Poverty and Human Resources Abstracts (bimonthly), Institute of Labor and Industrial Relations, University of Michigan-Wayne State University, P.O. Box 1567, Ann Arbor, Michigan 48106.

Psychological Abstracts, American Psychological Association, 1333 - 16th Street, N.W., Washington, D.C. 20036.

Rehabilitation Literature, National Easter Seal Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago, Illinois 60612.

Resources in Education (monthly), Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Science Information Exchange, Smithsonian Institution, 209 Madison National Bank Building, 1730 M Street, N.W., Washington, D.C. 20036 provides to qualified investigators, for a fee, selected abstracts of current research supported by foundation or government grants. The exchange covers such fields as medicine, nursing, public health, nutrition, psychology, education, anthropology, mental health, and intercultural relations.

Sociological Abstracts, 15 East 31st Street, New York, New York 10016.

RESEARCH RELATING TO CHILDREN

805 West Pennsylvania Avenue
Urbana, Illinois 61801

If you are currently engaged in research on children, ages 0 to 21, or their families, we would appreciate your cooperation in providing a summary of your work for inclusion in the next issue of *Research Relating to Children (RRC)*.

The Administration for Children, Youth, and Families; Office of Human Development Services; U.S. Department of Health, Education, and Welfare has funded the *RRC* staff to collect and disseminate information on current research relating to children and their families. The purpose of *RRC* is to inform researchers and others concerned with research in child life of current and ongoing research projects.

The instructions on the second page of this form will serve as a guide for your summary.

If you know of other researchers whose work might be of interest to readers, please give names(s) and address(es) below:

Thank you for your cooperation.

INFORMATION SUPPLIED BY

Name _____

Position _____

Organization and address _____

City _____ State _____

Zip Code _____ Phone _____

Please also include name, position, organization, and address of each investigator who worked on your project.

INSTRUCTIONS

Please type or print

Do not use abbreviations

Report studies *in progress* that:

center on children or their families in such areas as child growth and development, intelligence, personality, education, social adjustment, family life, delinquency, and physical and emotional disorders

concern service programs in the fields of child health, child welfare, or special education

DO NOT report:

animal studies

studies already published in sources generally available in major libraries

demonstration projects, unless there is a formal evaluation plan

regularly collected material such as annual reports, work preparatory to writing handbooks, directories, etc.

research based on secondary sources

SUMMARY OF RESEARCH

TITLE:

PRINCIPAL INVESTIGATOR(S):

DEGREE

POSITION & ORGANIZATION

PURPOSE OF RESEARCH:

SUBJECTS (Sample): (Include number, age, sex, and description of subjects.)

METHODS: (Include all information needed to describe your project adequately. Please do not use abbreviations or acronyms. Give full names of tests and measures. Additional space is provided on the next page.)

FINDINGS TO DATE:

DATE PROJECT INITIATED:

ESTIMATED COMPLETION DATE:

FUNDING SOURCE(S):

PUBLICATION REFERENCES: (Author, title, publication, date, volume, number, year for periodicals. Author, title, city, publisher, date for books.)

ADDITIONAL COMMENTS: (Use additional pages if needed.)

Originally established in 1912, the Children's Bureau has consistently been concerned with all matters pertaining to the welfare of children and child life. In 1948, the Clearinghouse for Research in Child Life was established within the Bureau specifically to collect and disseminate information about current research relating to children. In July 1970, Lilian G. Katz, Ph.D., Director, ERIC Clearinghouse on Early Childhood Education, University of Illinois at Urbana-Champaign, assumed production of *Research Relating to Children*, a publication of the Bureau's Clearinghouse for Research in Child Life. *Research Relating to Children* will provide information on current research relating to children and their families to educators, researchers, and others interested in the area of child life.

INVESTIGATOR REPORT FORM

Research Relating to Children
805 West Pennsylvania Avenue
Urbana, Illinois 61801

The following investigators are doing research concerning children or services for children. Send report forms to obtain information.

Name _____

Address _____

_____ Zip Code _____

Name _____

Address _____

_____ Zip Code _____

Name _____

Address _____

_____ Zip Code _____

Signed _____

Zip Code _____

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